University News

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Optical Illusions

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Do our eyes tell lies? Images such as two parallel lines that seem to meet or waves which seem to undulate confirm that our eyes do deceive us.Rembrandt, Dali and Picasso three most famous painters to date used visual deceptions to their advantage This phenomenon, referred to as an Optical Illusion, has received a lot of attention during the last couple of centuries. Though Optical Illusions are encountered frequently in everyday life, people's quest to unravel the mystery of illusions never ceases.

This five part series discusses various aspects of optical illusions and their psychological explanation

Optical Illusions-I (16:00)

A wall that looks bigger from the outside than it does from the inside! Two parallel lines that seem to meet!! Are your eyes deceiving you?Yes they are.Welcome to the world of optical illusions where nothing is what it seems.This program acquaints you with the most common optical illusions in daily life and takes a look at their explanations.

Optical Illusions-II (19:00)

Rambrandt, Dali and Picasso.Three of the most famous painters to date. Each had his own distinctive style, yet they all had one thing in common.They all used optical illusions to great advantage in their paintings.This programe takes a look at the proliferation of optical illusions in art.It also discusses a few works by the Dutch graphic artist, M.C.Esher.

Optical Illusions-III (19:00)

The third programme in this series goes into a detailed study of some of the most famous illusions in history. The never ending staircase, the impossible triangle and many more illusions are discussed here. There is also a detailed discription of illusions used by M.C.Escher in various sketches and paintings.The programme is a vivid account of all these illusions.

Visual Environment & Behaviour-I (17:00)

So far we have seen the many illusions that clutter our daily life.Now we come to the psychological explanation for these phenomena. A leading psychologist explains how we perceive different objects in different contexts.The effect of past experiences on our perception is also explained.The programme deals with both perception and its effect on our behaviour.

Visual Environment & Behaviour-II (13:00)

This programme continues where the last one left off.We get acquainted with how what we see affects how we behave.We also realise that what we have seen has a marked impact on what we see.The expert gives a lucid description of the various psychological phenomena involved in our perception.

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IN THIS ISSUE

University Education in India 1
Restructuring Higher Agricultural Education for Next Millennium 10

Convocation
Andhra University, Visakhapatnam 13

Campus News
Need for Technology-based Training 18
DST Evolves New Cost-effective Technology 18
NTR Health Varsity to Set Up Cyber Network 19
Sir Visvesvaraya & Sir Raman Awards 22

Agriculture
ICAR Meet at HAU 22

News from UGC
Countrywide Classroom Programme 23

News from Abroad
NRI Endowments at Canadian Varsities 23

Book Review 24
Theses of the Month 25
Classified Advertisements 40

Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.

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University Education in India

Current Problems and Future Challenges

S.P. Srivastava*

The contemporary discourse on higher education in India underlines a deepening crisis of university education system and its apparent inability to move proudly into the 21st century. Its obsolescence and its growing irrelevance perhaps constitutes the core of the crisis. Most of us in the system often feel that everything has gone wrong within the system of our university education and there is nothing to be proud of about its past. Given the manifest malaises of our universities, could one now believe what Pandit Jawaharlal Nehru said while addressing the graduates of Allahabad University in 1947 : "Universities in India", he said, "stood for reason, humanism, tolerance, search for truth and adventure of ideas". Simply put, could anyone believe now that one of the important functions of the universities is the advancement of knowledge by encouragement of original research? Far from their higher function of doing innovative research, our universities are not able to perform even their mundane function of routinised teaching. Little wonder then, all our universities have critics today who find fault in what we teach and how we teach. The thrust of the criticism is that we continue to cling to the century old system of teaching which has been discredited and abandoned even in the country wherefrom our university education system originated (England) and derived sustenance. In sum, and in substance, university education in the country stands at the confusing cross-roads, not knowing how to stop the drift and develop directions for change. Naturally there is widespread disillusionment. Questions are being asked in many quarters whether our universities are serving the purpose for which they were set up? What is causing serious anxiety at the moment is the fact that for a variety of reasons, our universities are not in a position to discharge their roles and responsibilities, let alone face the challenge of the 21st century. The future demands an altogether new role-set and technology-tuned response to adapt to the new methodology of teaching and research to effectively reach out to widening frontiers of knowledge being opened up each day due to the onset of information revolution and mind boggling advancement in the communication technology.

The present paper articulates the most pressing problems of university education in India and pleads for its radical restructuring. This is being done in view of the fact that the global scenario of university education has created a reasonable demand to rediscover and redesign our university education system in face of the changing educational requirements warranting continual upgradation and systemic changes to make it more purposeful and relevant to suit the changing ethos of the contemporary Indian society and to its organic, self-reliant and holistic growth. The thrust of the discussion, in essence, is that our university system requires fundamental change in its content, character and outlook. The future demands tempering of the university education system with current developments in science and technology. The money and efforts required for its modernization and develop-

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ment should, therefore, be regarded as an invaluable investment. What is essential is the 'will' and determination to make the university system relevant to the requirements of the 21st century.

The Pressing Problems

Whilst the list of the problems of university education in India is too long, the following however, stand out as the most pressing ones : (a) maladministration, inefficiency, indiscipline and lack of purpose and direction; (b) financial crunch, also arising out of financial irregularities and fiscal indiscipline; (c) ingress of politics in the appointment of vice-chancellors, also often in the appointment of teachers and in the affairs of the student unions; (d) irrelevance of teaching, instruction and examination; (e) presence of large number of students who are incapable of and uninterested in the pursuit of knowledge and intellectual development; (f) erosion of functional autonomy due to pervasive and often perverse influences of bureaucratic control; (g) continuously falling standards and almost total lack of excellence; and (h) rapid expansion of higher education arising out of the compulsions of local and regional demands leading to setting up of more and more new universities (residential and affiliating) which hardly have requisite infrastructure and demonstrate precious little of what we call 'academics'.

Though most of these problems are widely known, and most often discussed and deliberated upon in almost all discourses on higher education in the country, some of these need mention, even at the cost of repeating the obvious. Their mention is necessary to link up this discussion with the global educational trends and the emerging imperatives of fashioning the futuristic response to the educational practices of the 21st century. The attempt here is to highlight the most pressing problems which constitute the core of the 'crisis' our universities are confronted with.

Unmanageable Numbers

Of all the problems of our university system, the one that needs mention first is the inability of most of our universities to cope up with the rapid expansion in the number of students, most of whom are not cut-out for university education. True that providing access to education is the constitutional imperative enshrined in the Directive Principles of State Policy, this, however, does not mean that all those who journey through the primary and secondary levels of education must necessarily throng the universities. Higher education in all the developed countries, where excellence is being pursued with vigour, is rigorously selective, strictly merit-based, highly aptitude-oriented and great deal expensive and hard to get. This is being done to filter out the unfit, easy-going and academically incapable and scholastically disinclined. Those who are not going to benefit from higher education are diverted to vocational education of diverse kinds, preparing them for non-cerebral occupations and vocations. In our country, however, the privilege of higher education is for all regardless of their academic inclinations, their suitability and their ability to benefit from it. As a result, everyone — good, bad and indifferent — who completes the 10+2 level feels and finds that university degree is an absolute must to reach out to the greener pastures in life, indeed a cosy and comfortable white-collar job. The understandable craze for university degree is due to a number of factors, the main being its linkage with job-requirements and the preference given to those who hold degree or degrees to be eligible for employment. This being the situation, everyone rushes to universities for admission, not for the sake of knowledge, learning or professional preparation, but for obtaining a degree through means fair or foul.

For overcrowding in the universities, students are not to be blamed; the system has to be, because it creates alurement for a degree, which in the case of most universities, residential or affiliating, is easy to get without much investment in terms of money and effort. Overcrowding in our colleges and universities is also attributable to higher education being the least expensive, unlike other developed countries. All proposals to make university education a little more costly and cost-effective have been opposed as inimical to the entry of the sons and daughters of the non-rich sections of society. The social justice lobby decries all propositions of bringing about excellence in higher education as an elitist ploy to frustrate equity in education. The fear of the social justice lobby and the probable consequences of students' indignation is so much that no one dares talk about making university education a little more expensive. As a result the fee structure of university education remains what it was decades ago, despite the fact that the cost of university education has increased manifold in recent times. We are, therefore, caught in a messy situation and do not know how to restrict the numbers in the universities and save them from collapsing under the weight of unmanageable numbers. In the given situation it is unrealistic to believe that our universities will convert the poor stuff into high quality products. Universities are pressured, often by the government, and more often by student leaders, to continuously increase the number of seats in different courses regardless of the fact that the facilities to accommodate and teach the additional numbers exist or not. In a system of admission that works under several uncalled for pressures, merit is replaced by mediocrity and the quality by the quantity.

Indifferent Teaching and Research

Next to the problem of unmanageable numbers, the problem of indifferent teaching and research is no less serious. The crowded-classrooms, the inadequate infrastructure for teaching and research, the market-like atmosphere in many colleges and residential universities, the growing incidents of students indiscipline, and frequent closures of colleges and universities have combined to contribute to teaching and research being relegated to a low priority, next only to admission and examination. Teachers blame the students for many ills of the university system, and the students, in return, accuse teachers to be negligent in the performance of their primary duties. Accusations and counter-accusations notwithstanding, the fact remains that in large number of colleges and universities teaching is a casualty and chaos in the norm.

The indifferent teaching is largely due to the fact that old methods of teaching (classroom lectures) are being mindlessly pursued without any regard to innovative methods of teaching. The teachers seem to be contented with obsolescent instructional practices and the pedagogy of the past which has no relevance in an information age of spectacular communication technology. The teaching methodology in practice hardly encourages any independent thinking amongst the students; it only makes them memorise certain amount of theoretical knowledge for the purposes of reproducing it in the examination, and there terminates the scholarship.

In today's times the teachers with strong vocal cords, skills in fluent delivery of lectures, high-flown language of presentation and mesmerising impact of their presence and persona are of little importance. The burgeoning frontiers of knowledge in every discipline necessarily demand other methods of knowledge dissemination. The ongoing methodology of teaching hardly promotes any worthwhile intellectual interaction with the students to enable them to develop their capacities for independent inquiry and investigation. The result is that the quality of education is poor across the spectrum, except in the handful of enviable academic islands (elite universities and colleges) where attempt is being made to maintain international standards. The educational standards in many of the colleges and universities in certain parts of the country have now become so low that their products are virtually unemployable.

Before we go into the dynamics of falling standards of teaching and research, let us face the question whether teachers alone are to be blamed? or, are there other equally important factors which contribute to a perceptible fall in the educational standards? When asked to comment on the question of falling standards, teachers speak about the multiplicity of problems. All these refer to crowded classrooms, non-availability of the means of modernised methods of instruction; lack of latest books and journals in the library, disturbances on the campus, inadequacy of much-needed physical and instructional infrastructure, sub-standard laboratories, dwindling research grants, shrinking academic calendar (not allowing teaching to be conducted for a prescribed minimum of 180 days), vulgarisation of student culture (with lumpen elements playing fouled politics to vitiate the academic atmosphere in most colleges and universities), the neglect of pressing educational matters by the custodians of university education, and the mounting indifference of Principals/Vice-Chancellors towards a resolute redressal of some of the genuine grievances of teachers and students.

Notwithstanding the long list of problems which teachers find troublesome and terrible, nobody could, however, deny that teachers, for reasons good, bad and indifferent, have not showed up a collective will of the teaching community to improve the academic atmosphere of the colleges and universities. On the contrary, as the opinion goes, they too have contributed to the mess our higher education is in. One big reason is that most of our universities and colleges no longer have many brilliant and committed teachers. The education service in its present mode does not attract men/women of the best intellect and character. The monetary and material rewards in the teaching profession are not commensurate with the higher educational qualifications prescribed for the appointment of teachers in our universities and colleges. The best talent, therefore, goes into other sectors where rewards are high and working atmosphere is conducive to demonstrate ones skills and abilities. The trouble is that the society has too high expectations from the teachers without realising the gravity of their frustrations and without attending to their legitimate grievances. When teachers agitate for pay, perks and promotions, society reacts negatively, saying that teachers should not resort to agitational methods. No one seriously thinks as to what should the teachers do when sidelined in the pay commission reports. Teachers of today are not *rishis* and *munis* (saints and sages) of the past. It is therefore, naive to expect that they would not press their demands and would remain contented with whatever they get.

No doubt, the function of universities is the advancement of knowledge through production of research and promotion of new ideas, the lamentable fact, however, is that our universities produce little research of high quality to meet the international standards. Much of the research being done is of routine nature. Candidly speaking, research has become a ritual to write and publish papers/books to adorn ones curriculum vitae for personal advancement, and not for any higher academic purpose. Few of those who do research complain that research is not the priority for educational administrators and research-oriented teachers are an expendable commodity. They have little voice in the academic affairs of the university and are least organised and more disillusioned. Their frequent grouse is that the appointments and promotions in the university are no longer based on one's research output. For these, and many other understandable reasons, research has taken a back-seat in the academia. No one seems to be seriously concerned about it, as if research is unnecessary in the present set up of universities, which are nothing more than teaching shops. The only visible aspect of research is the production of Ph.Ds., most of which are substandard and plagiarised versions of already existing knowledge. The evils of the Ph.D. production system are too well-known and hardly need any elaboration here. The system is gradually turning into a money making racket for some teachers in certain universities in the country. Realising the poor quality of Ph.Ds., the University Grants Commission has rightly done away with its mandatory requirement in the appointment of Lecturers/Assistant Professors. The primary reason for the lack of good research in universities is not the non-availability of adequate research grants, or the poorly equipped laboratories or libraries; it is basically the lamentable lack of any marked emphasis on research. With the introduction of time-bound promotion of teachers from Lecturer to Professor, very few teachers now bother to do research of any kind, let alone of the best kind. We now have a big crowd of Readers and Professors in many of our universities and colleges who have not done any worthwhile research. So, where is the incentive to do research when promotions are automatic? In the stifling academic environment of the universities, it is futile to expect innovations in teaching and research. The rhetoric of academic excellence in both teaching and research has no relevance in the chaotic conditions of higher education in the country.

Examination System

Of the two main events in our university education system, namely, admission and examination, the latter is the most problem-ridden. Large number of writings and discussions on the subject loudly denounce the present examination system for many of its defects and drawbacks. The system has degenerated so much that it is apt to call it redundant and in need of immediate replacement. The list of charges against the ways through which the examination system operates and conducts its business are too many, and most of these relate to instances of mismanagement, manipulations and misdemeanours. The charges of corruption against those who handle the system are repeatedly and routinely published in local and regional dailies and convey a loud message of the system being a giagantic racket in which the functionaries of the system are said to be involved. In the garb of the 'secrecy' which surrounds the mystique of the system, much money is gobbled and many pulls and pressures are allowed to have their play. Papers are leaked, marks are manipulated and divisions are manoeuvred. Looking at the travails of our university examination system it would suffice to say that the system has lost its credibility and has become a farcical exercise of evaluating the knowledge and performance level of the students.

The incidence of mass copying and the students' defiance to ignore the invigilators' warnings, and even the examinees' attempts to humiliate the invigilators in the examination halls are increasing in many parts of the country. Scared as most teachers in many universities are in regard to the effective performance of invigilation duties, many of them do not report for duty and take casual leave to avoid insults, threats, harassment and humiliation from a section of students who insist on copying with vengeance. Faced with such a situation, clerks, peons and research scholars are deployed by the university administration to undertake invigilation work. Understandably, papers are distributed and answer books are collected with no regard to unfair means adopted by the students. Large number of policemen are deployed to let the examination being conducted, but their presence hardly changes the scenario. Unless any invigilator is physically abused, policemen refuse to intervene, and hence the students have nothing to fear from the men in Khaki. Small number of unfair cases reported are only a smokescreen, hiding the existence of large scale copying.

Given this scenario, what do we mean by sanctity of examination? It is nothing but a sick system of too many maladies. The problem is that universities are still sticking to it in full knowledge of its most malignant manifestations. The issue of examination reform has been visited by almost all committees and commissions on educational reforms in the country and many useful recommendations have been made. Unfortunately the forces of status quo are so powerful and the constraints of the university system are so compelling that the issue of examination reform resides in the realm of rhetoric and the ground realities refuse to initiate corrective measures. The UGC too is a mute spectator, busy only in appointing committees whose hard labour goes waste in face of odds that inhibit the implementation of any change in strategy. The much touted idea of semester system sounds unfeasible in face of the fact that most universities now find it difficult to conduct one annual examination and declare the results in time. Delayed academic sessions in many universities foreclose the possibility of introducing the semester system. Furthermore, internal assessment as part of the evaluation, has immense possibilities of its misuse in the disturbed atmosphere of many universities and colleges. The fear is not that the dishonest teachers (teachers of low integrity) will indulge in favouritism, the fear also is that the *dadas* of the student community will be the biggest beneficiaries. This has happened in many universities in the northern region where teachers now oppose the idea of internal evaluation to save their soul from all kinds of pressures. The argument that the professional institutions of higher education are successfully operating the system does not hold good in the case of most of our universities where atmosphere has been so much fouled that no worthwhile reform in the examination system is possible. In all these universities neither the semester system nor the internal assessment can work. Even the other suggested alternative, the centralised evaluation system sounds impractical given the stupendous nature of the task.

Now the issue is what do we do in a system where old tricks have been grounded and the new ones refuse to take off? The issue of examination reform has been rendered complex because our universities have become too large, too unacademic, too prone to politics, and hence, too difficult to manage. The issue of examination reform cannot be viewed in isolation; it has to be viewed in the grotesquely unacademic milieu of the colleges and universities where nothing seems to work the way it should. Examination reform is possible when a larger structural reform of the entire system of higher education is introduced and implemented.

Disturbed University Campuses

It is a matter of common knowledge now that most of the university campuses, especially in the northern region, remain perpetually disturbed on account of teachers' and students' unrest. The university closures are frequent due to students' vandalism or due to teachers' strikes. And, both find roots in the growing politicisation of higher education's culture. The student unions are no longer the bodies to promote the students' educational interests. They have become the instruments of political power struggles on the campuses. Each political party vies with the other for having its own 'boys' elected to the students' union and thus create a vote bank in the universities. The politicisation of the student community has reduced our university campuses into battle grounds for rival political parties. Our politicians and political parties regard colleges and universities as nurseries for recruiting their followers. The spread of the country's wider political culture in the campuses of colleges and universities has divided the student community in terms of political ideologies, as also on caste and communal considerations. Majority of our student union leaders are students only in name; they are, in fact, full-time politicians having close links with political parties and emulating the role model of the kind of politicians we now have in the country. The university/college union elections are, therefore, keenly contested with full use of money and muscle power, besides other parochial considerations of caste, creed, community and the region. The money that each candidate spends in his election runs into amounts unbelievable. Where does this money come from is an open secret. It comes from politicians, local businessmen, hoteliers and big shopkeepers who are pressured to pay handsome amounts, or else, face the consequences.

Many of the college and university campuses are now dominated by student leaders who practise and promote all types of unfair and even coercive methods to pressurise and often intimidate the university/college authorities to concede their populist demands in matters of admission, hostel accommodation, examination etc. Getting their favourites admitted to different classes/courses through pressure tactics, getting the examinations postponed or extended on flimsy pretexts, and getting exonerated their friends and followers involved in indiscipline and use of unfair means in examinations are three principal functions of student leaders now. These are their main preoccupations and pastimes, and these indeed are the root causes of many pernicious problems on the college and university campuses.

University and college hostels are held hostage by lumpen elements of the student community who keep occupying the rooms for years together. It is difficult for any Vice-Chancellor or the University Proctor to evict them from these safe havens. The university authorities are scared of taking action against the trouble-makers amongst the hostel inmates who have the potential of paralysing the university anytime they want to. It is their writ that runs the hostels and it is they who manage or mismanage the hostel affairs. The atmosphere is so terror-ridden that hostel wardens rarely visit the hostels under their charge and often allow the toughs to virtually hold the complete control over the hostels and run these as their fiefdoms. Frequent fightings and gang-wars are common features amongst the hostel inmates. Use of fire-arms is also not uncommon when differences develop and altercations erupt. In face of frequent troubles in the hostels, the university administration finds itself in a bind not knowing whether to close down the hostels for ever, or completely hand them over to the local police. The prevailing view, therefore, is that since the university administration cannot run the hostels and maintain peace and order there, the facility should be scrapped altogether. Many colleges in U.P. and Bihar have already closed down their hostels. This is the measure they had been forced to take under desperate conditions.

The problem of disturbed university campuses is not solely because our colleges and universities have large number of rowdy students, or because many of them are not there for studies; it is also because of the teacher-politicians on the campuses, whose number is steadily growing. Teachers' associations, like students' unions are divided not only on the basis of their political ideologies, but also on caste and communal considerations. Some teachers patronise lumpen elements of the student community and are often at the back of number of troubles on the campuses. On several occasions when disturbances develop on the campuses, it is usually the teacher-politicians who have a field day. Instances are not lacking when teachers have incited students to threaten, abuse and manhandle the senior functionaries in the university and college administration. Students are also often used by teachers for very many nefarious purposes.

The campus disturbances are also often created by the *netas* of the non-teaching staff. Instances of indiscipline by non-teaching staff are on the increase in almost every college and university in the country now. The trouble is that the unions of non-teaching staff are so powerful and strong that no Vice-Chancellor ordinarily likes to take action against the erring elements among the class III and IV college and university employees. Now in most of our universities leaders of the non-teaching staff are in a position to dictate their terms and get their demands conceded without much resistance. They are in the habit of resorting to lightening strikes, gheraos and dharnas on each available opportunity. They can paralyse the university administration in the same manner as the students union office-bearers do. No Vice-Chancellor wishes to be strict with them even when situations demand stern action against the lazy, inefficient, non-performing, indisciplined and even corrupt members of the non-teaching staff.

Diminishing University Autonomy

The idea of autonomy is in-built in an idealised version of university administration. It had been a cherished value until a few decades ago. However, things have taken a different turn now. The power of the government over the university world has increased tremendously and is increasing with each passing day. No university now enjoys the freedom from government control and other extraneous interferences. The academic freedom of universities is in danger from the grasping hand of the bureaucracy. Dependence of the universities on the state and their subordination to it has tended to weaken the springs of self-government, self-regulation and self-control. The dependence of universities on state funding has always been there, but then the state interference was limited to providing funds and other necessary educational facilities. The state had allowed full autonomy to the universities while believing (and practising) that education in all its stages is an obligation of the state without confusing the state aid with state control. The scenario today is different since universities are fast becoming the departments of the state secretariat. The dependence of the universities on state funding has come to mean direct state interference in number of academic matters. The maxim 'he who pays the piper plays the tune' has turned full circle.

The erosion of the university autonomy first began with the interference of politicians and bureaucrats in the university administration. All politial parties in power try to strengthen their stranglehold in the universities by getting their nominees appointed as Vice-Chancellors and other key functionaries — Registrars, Finance Officers and Controllers of Examinations. Next came the move to pack up other higher bodies of the university system — senates, syndicates and executive councils with the henchmen of the government and the political party in power, who in most cases are bereft of any higher academic or professional qualifications. The worst instances of political/bureaucratic interference in the university administration are to be seen in the appointment of Vice-Chancellors of convenience and of dubious academic distinctions. Worse still several state governments have appointed IAS, IPS and high ranking military officers as Vice-Chancellors in many universities.

With all this happening the post of the Vice-Chancellor as an administrative and academic head of the university has been so much devalued that any minion of the government can occupy this exalted chair. This is because no qualifications are prescribed for the appointment of Vice-Chancellors. Gone are the days when Vice-Chancellors were scholar-administrators of great repute. Now the favourites of the political party in power adorn the chair and disgrace it for three or more years. None of them inspire or enthuse the university community as far pursuance and promotion of academic excellence is concerned. Their only function is to please the politicians in power, placate the politically connected office-bearers of the student union, humour the teacher politicians on the campus, bestow favours on the select number of their favourites in the university administration, hold nocturnal *durbars* of teacher courtiers and make money, if possible. Their academic endeavours are limited to getting the admission process complete, the examination business conducted and results declared. In between their interest lies in making appointments of teachers and other functionaries in the university administration. This is the job they do with great interest, for, this allows them to pay due obeisance to politicians and other heavy weights in the state bureaucracy who have helped these men become Vice-Chancellors. The scenario being so depressing as this, how can one expect the Vice-Chancellors to safeguard the university autonomy and provide positive academic direction to the universities?

Resource Inadequacy

In terms of the availability of infrastructural facilities required for proper teaching and relevant research most of our universities and postgraduate colleges present a pathetic picture. The financial position of the majority of our universities is far from satisfactory. There are universities which do not have enough money to pay salaries, leave alone meeting the other expenses on maintenance of buildings, classroom facilities, laboratories, libraries, hostels, administrative offices and university guest houses. Most of the universities are working on deficit budgets and their revenues from different sources are hardly sufficient to meet their growing demands. The total dependence of the universities on the state funding has become a problem now since most state governments themselves are bankrupt. They are in no position to meet the growing cost of higher education.

Faced with financial worries, most universities are now arguing in favour of privatisation, as is being currently suggested by the UGC and the HRD Ministry. Privatisation has often been turned into an argument for the abdication of state's responsibility towards something as crucial as higher education. While there is much merit in this argument, the fact remains that under the existing constraints of state exchequer, the growing cost of higher education can no longer be met with public budgets alone and the greater reliance has to be placed on private financing. But the privatisation proposition is not as simple as it appears at the face of it; it has its own limitations and can lead to other undesirable consequences. But one thing is certain : universities cannot manage adequate supply of fiscal resources either from the government or from private sources, or from both.

Future Challenges and Trends

The prevalent problems of our universities demand immediate attention if further drift and decay is to be avoided. The educational culture of the 21st century warrants new reform packages and an altogether fresh approach in tune with global futuristic trends in higher education. The fast expanding domains of knowledge, owing to increasing pace of information explosion, necessitate radical changes involving newer options of academic renewal. The neglect of the critical problems of higher education has already done enough damage to the academic image of the universities. The nation will suffer further decline in the standards of higher education, if it fails to respond to the emerging challenges of a developing society like ours. It is indeed unfortunate that we have not heeded to the good advice of various educational reforms commissions and have delayed for too long the implementation of valuable recommendations of University Education Commission (1948) headed by Dr. Radhakrishnan, the Education Commission (1966) headed by Dr. Kothari, the National Education Policy of 1968, and the Acharaya Ramamurthy Committee of 1990, besides the recommendations of other important national and state level committees on educational reforms. All these recommendations have suggested corrective measures of far-reaching significance. Since our reform endeavours have, in most cases, been adhoc, sporadic, piecemeal and cosmetic, the system of higher education in the country has undergone little change.

Now, the newer trends in higher education, consistent as they are with revolutionary developments in communication and information technology, call for greater introspection on innovative methodologies of teaching and research in our universities. One of the important future trend of university education anticipates close interaction between teaching and research. The standards of university education would now be judged in terms of how much new knowledge is absorbed by the system and disseminated in the classrooms through modern devices of communication technology. When this happens the entire process of teaching, instruction and learning will change. The traditional lecture method will be rendered obsolete. Newer cost-effective approaches to teaching and research would then become imperative. To incorporate the newer changes in the educational technology an alternative agenda for higher education will become the foremost priority.

It is encouraging that many eminent educationists in the country are now talking about the exciting changes that are likely to influence our university education system. Writing in a recent issue of *University News* (October 5, 1998) Prof. A.N. Maheshwari, former Vice-Chancellor, Cochin University of Science and Technology, now Joint Director, National Council of Educational Research and Training, New Delhi, made a very thoughtful observation on the technological nature of futuristic changes to be incorporated in the educational culture of higher education. He wrote : "As the world is gradually entering an information age, India has also to re-engineer its education system at all levels to organise itself as a learning society. In this context all educational institutions, particularly of higher education, may have to undergo a paradigm shift for playing a proactive role in building a learning society." It is encouraging to learn from Maheshwari's write up on "An Alternative Agenda for Higher Education" that the Government of India has decided to launch Operation Knowledge as part of the Information Technology Action Plan in recognition of the fact that information technology will be a frontier area of knowledge in the 21st century. When the proposed 'operation knowledge' package is put into operation, computers and internet will be the essential tools of quality education. The alternative agenda that Maheshwari talks about would certainly open up the exciting possibilities of change in the traditional pedagogy, much of which would soon be rendered redundant. But all this would require massive technological input into the educational system at all levels, especially at the higher level in universities and colleges. The modernisation and upgradation of existing educational technology would necessarily require a large amount of money to be pumped into the system.

Looking at the futuristic requirements of higher education, the issue of resource generation would come into greater prominence. Whilst the state funding will continue, the monetary and material requirements of the higher education system will have to come from sources other than the state. The privatisation argument will attract greater attention and much stronger consideration. That would, first of all, require the removal of many misconceptions from the public mind about the privatisation of higher education. Now in some quarters privatisation is often misinterpreted as complete withdrawal of the state from financing higher education. This is not the true import of current privatisation proposition in regard to the financing of higher education in the country. The true import of the argument is to explore the new sources of finance in sharp contrast to privatisation which is based on ownership of educational institutions. Privatisation basically refers to private financing and increasing reliance on non-governmental sources of educational finance in place of ever increasing government subsidies. From the privatisation argument it does not follow that the state should withdraw completely from any financial commitment towards this crucial educational sector. There are several reasons why state subsidisation of higher education should continue in our country. First, subsidy is favoured on equity grounds as education is considered to be a major source of equality. Second, in many countries where private sector plays a predominant role in higher education, government support continues to be an important source of funding. Third, the state cannot simply surrender its responsibility by leaving the domain of higher education entirely to private sector whose motivation in establishing self-financing colleges, especially in the medical and engineering field, seems mainly to consist in their profitability.

The search for exploring the newer methods of cost recovery may also include : (a) substantial upward revision in the level of tuition and other fees prevalent in our colleges and universities; (b) striking greater correspondence between costs involved and fees charged; (c) mobilising donations from alumni associations (as is done in many western countries); (d) introducing a liberal system of student loans to help the poor, meritorious and well-motivated students avail loans, enroll themselves in the institutions of higher learning, get employed on successful completion of their respective courses and repay the loans as and when they are able to do so; and (e) opening up of self-finance courses in managerial science with reasonable fee structures.

Apart from the need of exploring newer avenues of financing higher education, there are many other important areas which need to be looked into. The first I believe is need to emphasise that the success of the university is not to be judged by the number of its students. Quality, not quantity, should be the aim of all genuine university work. If the quality is the underlying idea of excellence in higher education the present feverish craze for degree has to be stopped by delinking it from eligibility conditions of securing various types of manual, mechanical and other skill-based occupations and vocations. This will, hopefully, reduce the pressure of increasing student population on most of the universities and colleges. A massive vocational orientation of secondary education is also necessary to stop the maddening rush to universities. We must try to control the flood of numbers in higher education by putting appropriate barriers at the secondary education itself. We will have to diversify and vocationalise higher secondary education so that it becomes a terminal point for majority of students who aimlessly throng universities and colleges. It is an open secret that a large percentage of students who are admitted to universities and colleges are ill-equipped to profit by higher education. It is no kindness to let them waste two or three precious years of their lives in pursuit of an unattainable objective.

We have now reached a stage wherein the policy of selective admissions to institutions of higher learning has become an absolute must. There is no escape from it if the universities and colleges are to be saved from collapsing under the weight of unmanageable student population. Distance education and open university education system can reduce the pressure on the universities. In addition, and in spite of all theoretical arguments to the contrary, we will have to regulate the expansion of the system of higher education within manageable proportions and relate it more realistically to the manpower needs of the economy or to the employment opportunities that are being generated.

Since the question of quality in higher education is integrally linked with the issue of academic standards, we will have to plan the expansion of higher education very carefully so as to ensure that every institution of higher education will have a competent faculty, an enrolment of manageable size and necessary infrastructural facilities to promote the pursuance of academic excellence. Unfortunately, a great deal of expansion in higher education is taking place at the cost of quality. More and more universities and colleges are being opened on a variety of non-academic considerations — regional, political and otherwise. The trouble is that most of the colleges and new universities that are mushrooming in the country are being brought into existence without much planning for the continuous inflow of resources, adequate infrastructural facilities and little regard to educational standards. This is a wrong method of expansion, and it does more harm than good. We must now adopt a new policy under which the expansion is done in a planned manner and consistent with the maintenance of high academic standards.

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Restructuring Higher Agricultural Education for Next Millennium

L.S.R.C.V. Ramesh*
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Introduction

When Plato defined education as "Turning Mind's Eye to Light", he had general education in mind. Modern professional courses prepared students for careers in specialised subjects. Medicine, Law, Engineering and Architecture all began by concentrating on developing technical knowledge and practical skills to enable successful students to undertake private practice. However, the rise of corporate businesses in the last few decades has created vast opportunities for employment and service for most professionals.

Engineering, Computers, Finance and Accounts, and Business Management are some of the professional courses which have a basic commercial orientation. On the other hand, Medicine, Law, and Veterinary Science professionals still depend on their personal professional skills. However, even in these professions, in recent years, there have been considerable changes and corporate/commercial enterprises have created a large scope for employment and service that require commercial orientation and managerial skills. This management perspective is slowly seeping into the curricula of the professional courses. There is also a recent phenomenal growth in management diplomas related to different professional fields to cater to job opportunities available in the business sector.

Agriculture became a professional stream through evolution of applied biological sciences. It gained ground through setting up of special Agricultural Universities all over the country. Over the years, agricultural science has been compartmentalised into Agriculture, Horticulture, Veterinary and Fisheries disciplines with an adjunct of Home Science. Barring veterinarians, most other agricultural professionals do not individually practise professional/technical skills like medical doctors or lawyers, nor have they acquired commercial and business orientation of other professions. The educational system and the employment opportunities in the public research system in our country have slotted agriculture as an applied science but kept it away from realising its true potential as a profession. Although India owes a great deal to its agricultural scientists for the tremendous increase in food production in our country, the relative socio-economic backwardness of the farming community and the fragility of agriculture in general, and rainfed farming in particular, are symptoms of a system's failure. There are three main reasons for it :

- Firstly, agricultural education in India has an orientation towards crop production and very little attention is paid to value addition in terms of storage, cold storage, transportation and processing. Similarly, market research into demand projections, exploring niche markets and export potential are important considerations for choice of production technologies as well as establishing backward and forward linkages to make them commercially viable from the farmers as well as the industries point of view.
- Secondly, agricultural education has worked within the paradigm of transfer of technology from the scientist to extension officer to farmer. The emphasis has been on awareness creation and dissemination of new technologies through extension and communication techniques, with a weak effort at skill upgradation. However, there has been very little effort to create a cadre of agricultural professionals to provide technical and professional services such as diagnostic services for plant and soil health, farm management services, or technical and entrepreneurial skills — upgradation services for the farmers to help them take more informed decisions about their agriculture.
- Thirdly, employment opportunities in the public research and extension systems in India have dominated curricula in the agricultural universities for the last three decades. The accent has been on scientific sub-disciplines and extension/communication methods. Even at the Postgraduate level, greater emphasis is laid on research rather than applied management. It is this lack of managerial orientation in the professional courses which comes in the way of agricultural graduates/postgraduates from getting even middle level management positions in the private, commercial/corporate sector in the agricultural

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input marketing or agro-output processing industries. Other professionals from the fields of marketing, finance, production etc are cornering management positions while agricultural graduates are being pushed down the ladder as field functionaries to make use of their limited technical knowledge.

Rethinking Higher Agricultural Education

In view of the globalisation and rural reconstruction, higher agricultural education may be re-oriented in the following contexts says Wout Van den Bor, J.M. Bryden and A.M. Fuller.

Target Groups and Content

New categories of students are emerging, such as international students, elderly, groups of distance students and other irregular demand groups who demand specific tailor made courses on a contract basis. This necessitates restructuring of traditional curricular content and calls for flexible, international oriented, open and interactive models of curriculum planning involving different groups of stakeholders.

Institutional Management

Networking is essential to tap external knowledge sources for restructuring curricula.

With constraints on government expenditure on higher agricultural education, educational innovations need to be financed from private sources which stimulate market orientation, commoditisation of education, research and outreach and the growth of a commercial attitude among institutional management.

Professionalisation

Professionalisation of higher agricultural eduction is in terms of changed modes of delivery and professionalisation of staff. Modes of delivery should change from teacher centered to interactive and student centred, from consumptive learning, to discovery learning from theory dominated to dual learning, from knowledge accumulation to problem orientation, from content oriented to self-regulative learning, from institutional staff based learning to external human resource input and from low level to high level cognitive learning.

Teaching and lecturing should no longer be looked upon as transfer of knowledge but as didactic counselling. This requires professionalism in terms of mastery of subject matter and didactic and communication skills.

Change in Strategies

There is a need for more cost-effective, innovative curricula to serve new client groups and to stimulate institutional entrepreneurship. Quality improvement of scientific work, including teaching and outreach is essential. Making better use of knowledge and insights of all stakeholders within and outside the university or college is important in strategic institutional planning.

Future Challenges

The dynamic social and economic changes in Indian life during the past few years have forced colleges to make critical self assessment. When everywhere the urge was growth, flux and ferment, the agricultural institutions could not stand for status quo or stability. When the country with its agriculture was hurrying into the future, it required the agricultural institutions also to hurry along with it. They are expected to pass the tests of utility and value as service-oriented institutions. A hope of flamboyant self assurance had no place. Men and women turned out by the packaging of mediaeval curriculum in the stereotyped college were not answering all the demands of the changing times. They lacked the will to achieve higher standards of excellence and of learning and were unprepared to serve the people with enthusiasm and dedication. Stirrings of dissatisfaction and reform were apparent and soon became a movement to shift emphasis from the traditional course of study to something more meaningful and useful for contemporary life.

Institutions of higher agricultural education will have to face additional challenges in the future according to Henrich K.P. Hoffman due to new developments at global, regional, national and local levels relating to : (a) growing international trade and competition in agriculture, changing consumer demands and modification of production and processing patterns, and growing concern to issues of environmental control and sustainability; (b) New developments in science and technology in the areas of molecular biology, genetic engineering, agricultural management, information technology and computerization; and (c) Continued population growth and change of life styles, behavioural patterns and value systems.

These changes necessitate that institutions of higher agricultural education reconsider and modify their objectives, programmes and management practices.

In the future :

- Appropriate curriculum structures, staff training and incentive schemes, resource needs and limitations need to be identified and tested.
- Institutions of higher agricultural education need to pay attention to the area of sustainable development which draws on inputs from many scientific disciplines.
- Other potential research areas such as biotechnology, food science, agro-forestry, com-

munity horticulture and business management are expected to receive increased attention.

- Institutions of higher agricultural education must be permitted to participate as equal partners in decision making at the national level on research priorities, and in the actual execution of research activities. This necessitates better institutional linkages with research and extension institutions and international organizations.
- Training and information needs of emerging new client groups, including small-scale horticulturists, nature lovers and environmental enthusiasts, must also be considered by educational institutions.
- Institutions of higher agricultural education need a comprehensive strategic master plan indicating envisaged programme changes, resource needs and mobilization measures planned, infrastructure, organizational and administrative changes and a time frame for implementation.
- Relevance and quality of teaching programme need to be achieved and maintained through regular curriculum reviews. Monitoring and evaluation methods should be introduced for evaluation of teaching and extension alongside research.
- To increase financial self management, institutional services can be marketed, or resources solicited from business firms, foundations etc.
- With increased movement of agricultural students across boundaries, institutional cooperation in postgraduate education and research is vital. Implementation of regional/sub-regional networks of centres for agricultural education and research in key subject areas would be meaningful.

Attracting Youth to Agriculture

Despite growing opportunities for college graduates in the food and agricultural sciences, enrolments in agriculture colleges have suffered in recent years. With fewer youth going into agriculture, the long-term future of the agricultural industry and the extension systems is rather bleak.

Agriculture colleges need to address this by communicating a more positive image of agriculture and reaching and creating a larger pool of youth.

Suggestions

1. Colleges of agriculture could establish a special task force on youth development in and about agriculture to draft a plan for implementation.
2. Request new campus resources and reallocate existing resources within agriculture colleges to initiate this.
3. Involve all academic units of the colleges in assuming appropriate roles and responsibility for youth development in and about agriculture as a coordinated, high-priority initiative in each state.
4. Develop a five year plan for institutionalizing youth development as a major college priority through mechanisms like interdisciplinary centres/institutes for youth development, a new thrust to institutionalize a teaching and research component on youth development, and linking existing outreach mechanisms of agriculture colleges with existing state youth organizations and programmes in agriculture.

Conclusion

Since independence the aim has been to diversify the economy by accelerating the pace of industrial development, increasing agricultural productivity and achieving all round progress. Science and technology have been brought closer to the farmer and availability of inputs has considerably improved (*Somasekhar,* 1993). This was possible because of the development and well organised teaching, research and extension functions in agriculture field. Earlier agriculture was taught as one of the subjects in the conventional universities and the agriculture graduates thus produced, formed the core of the administrative set up of agricultural departments.

The abandonment of the old curriculum with its external examination and its replacement by a more complex curriculum with internal evaluation is perhaps the most important single consequence of the reform as reflected in the introduction of agricultural university concept. This is of special significance in the context of immense pressure for superficial education, something to give reputation and polish at the least expense of time and effort.

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Event of the Century

Justice M.N. Venkatachaliah, Chairman, National Human Rights Commission, delivered the Convocation Address at the Sixty-Seventh convocation of the Andhra University, Visakhapatnam. He said, "India's freedom was the most sublime event of the Century. Not so much because a great mass of humanity under bondage became free; but because in achieving this aspiration new and great heights of the spirit were attained by those who, by the sacrifices of their lives, gave to the posterity the great blessing to shape its own future on the common bonds of truth and justice." Excerpts

The importance of the educational system in shaping the future and destiny of a nation can never be sufficiently over-emphasized. About the importance of Universities, Pandit Nehru said : "A University stands for humanisms, for tolerance, for reason, for progress, for the adventure of ideas and for the search for truth. It stands for the onward march of the human race towards ever high objectives".

The meticulous care a country ought constantly to bestow on the excellence of its system of education is reflected in the caution that an American Committee administered to its country in its report entitled *A Nation at Risk.*

"Our Nation is at risk. Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world. This report is concerned with only one of the many causes and dimensions of the problem, but it is the one that undergirds American prosperity, security and civility. We report to the American people that while we can take justifiable pride in what our schools and colleges have historically accomplished and contributed to the United States and the well-being of its people, the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a nation and a people. What was unimaginable a generation ago has begun to occur—others are matching and surpassing our educational attainments.

If an unfriendly foreign power had attempted to impose on America the medicore educational performance that exists today, we might well have viewed it as an act of war. As it stands, we have allowed this to happen to ourselves. We have even squandered the gains in student achievement made in the wake of the Sputnik challenge. Moreover, we have dismantled essential support systems which helped make those gains possible. We have, in effect, been committing an act of unthinking, unilateral educational disarmament."

The cause is even more relevant to us today.

We are celebrating the 51st Anniversary of India's freedom. The word 'freedom' like the kindred words 'truth' and 'justice' has always opened up a vast music of hope, of fulfilment, and of redemption.

India's freedom was the most sublime event of the Century. Not so much because a great mass of humanity under bondage became free; but because in achieving this aspiration new and great heights of the spirit were attained by those who, by the sacrifices of their lives, gave to the posterity the great blessing to shape its own future on the common bonds of truth and justice.

Freedom essentially signifies liberty of choice. But what our own generation did with its freedom of choice is again a story of both ecstasy and agony. Has India achieved a substantial measure of success in handling its economic problems? The answer may not altogether be in the negative. Again, looking back, can we say that the great and caring Indian society uniting its members in the common bonds of justice, equality and compassion that those who brought us freedom fondly dreamt of, was achieved? In sadness, one must confess that the answer is 'No'. That is the greatest tragedy of our times. It is time, therefore, to look back in some humility on the journey of the past fifty years and honestly to assess how worthwhile it has been. Material and economic prosperity is one side of things. It relates to man's wealth and the standards of living. Quality of life, in the true spirit of freedom and equality, is a matter that belong to man's well-being.

Some futuristic euphoria about India has come from knowledgeable people. Some say that by 2020 India would be one amongst the first ten countries in per-capita income and the third in purchasing-power-parity; that by 2020 India will be the largest software developer in the world and that the advances in space technology would greatly enhance the potential for education, tele-health, disaster management, remote sensing meteorology etc. Some others predicate that India will develop into a Human Resources Development-oriented, stable, federal democracy. The thrust areas of business in the next decade or two are perceived as the service-sector : Tourism, Banking, Transportation, Airlines, Shipping, Medical-electronics, Health, Information-technology, Communications. The other areas of growth are Food-processing and Pharmaceuticals. The optimists predicate a sustained seven per cent growth in infrastructure for twenty years and thereafter at five per cent till 2037 which, according to them, would make India a powerful economy. India and China, it is said, would emerge as two great powers of the world.

We might here have a glimpse of our own industrial past. India, it would appear, had a population of about 110-120 million for almost 2000 years from 300 BC to 1600 AD. In 1750, India's share of world's manufacturing output was 24.5% while that of Japan was 3.8%; of U.K. 1.9% and of U.S. 0.1%. But today India's share of world's GDP is about 0.9%. India occupies 2.9 per cent of the earth's land mass and has 17 per cent of its population. But Japan has 0.28 per cent of earth's land and a population of 2.29 per cent of the world. The per-capita GNP in Japan is nearly 90 times that of India. Japan's share of world's GDP is nearly 18 per cent.

India's social infrastructure is not a happy reflection. According to some estimates, 50% of the world's leprosy afflicted are in India. Besides 40% of the world's tuberculars are in it. Every minute an Indian dies of tuberculosis and every minute two or more are newly infected. About 40% of all the infant mortalities of the world are said to occur in India and 25% world's blind are in it. By 2000 AD nearly 50% of the world's illiterates wil be in India. 670 millions do not have basic sanitary facilities and nearly 260 million do not have safe drinking water. About 38% of India's population constitute children below the age of 14.72% of India's population is that of persons below the age of 35.

In the year of the American Declaration of Independence, Adam Smith published his *Wealth of Nations*. He posited : (i) The principal human motive is self-interest; (ii) The invisible hand of competition automatically transforms the self-interest of many into common good; (iii) Therefore, the best government policy for the growth of a nation's wealth is that policy which governs least. But anti-Smithians are also alive and well. They believe that : (1) economic planning is superior to laissez-faire; (2) markets are usually monopolized in the absence of government intervention, crippling the invisible hand of competition; (3) even if markets are competitive, the existence of external effects, public goods, information asymmetries and other market failures ensure that laissez-faire results in the common bad rather than the common good; (4) and in any case laissez-faire produces an intolerable degree of inequality.

All countries have eschewed unbridled economic individualism. But there are great inequalities in the international economic order. It is said that four richest men of the world possess wealth which equals the combined GDP of the 48 least developed nations and just 32 richest men have personal wealth which equals the combined GDP of South Asia.

A restructuring of global financial markets and institutions after the breakdown of Bretton Woods has enabled the accumulation of vast amounts of private wealth a large portion of which has apparently been amassed as a result of strictly speculative transactions. "Without need to produce commodities, enrichment is increasingly taking place outside the real economy divorced from bona fide productive and commercial activities. Capital flight dramatically reduces a state's tax revenues, paralyses social programmes, drives up budget deficits, and spurs the accumulation of large public debts. Within this global financial web, money transits at high speed from one banking haven to the next, in the intangible form of electronic transfers. 'Legal' and 'illegal' business activities become increasingly intertwined. Favoured by financial deregulation and collaboration of banking institutions, this black-economy has entered the spheres of merchant banking. In such bizarre world-economics, it is of great significance as to how market economy behaves in countries with very large populations'.

In a great measure challenges before us relate to and arise out of our inability to handle and manage forces of change. This inability is both individual and institutional and is the result of an inherited mind-set. The stereo-type of the pattern of University education, the traditional concept of colleges, students, curricula, classrooms, will all greatly change. Though the ideals of education and their eternal verities continue to inform the educational endeavours, the content of education will change. The achievements in Science and Technology of the next century will far out-class those of the past 1000 years. Human life span might itself be doubled. Boundaries between machines and the thinking man will get increasingly blurred and great issues and dilemmas of biogenetic research will surface. Human brain and its potential will increasingly preoccupy research. Humanity will have to cope with an increasing depletion of the gene-pool of the tropical forests. Learning process by electronic implants is an imminent possibility. These changes correspond in their complexity to the changes in the ecosystems of the planet itself. The Brundtland Report *Our Common Future* gives an idea of these changes :

"Over the course of this century, the relationship between the human world and the planet that sustains it has undergone a profound change. When the century began, neither the human numbers nor technology had the power radically to alter planetary systems. As the century closes, not only do vastly increased human numbers and their activities have that power, but major unintended changes are occuring in the atmosphere, in soils, in waters, among plants and animals, and in the relationship between these. The rate of change is outstripping the ability of scientific disciplines and our current capabilities to assess and advise. It is frustrating the attempts of political and economic institutions, which evolved in a different, more fragmented world, to adapt and cope."

Moreover, international human rights norms and their domestic applications will increasingly alter and even subvert the concept of national domestic sovereignty. Profound structural transformation will affect interstate relationships. Individual states will no longer be able to claim immunity from the consequences of use of violence within their own territory. Most forces that affect people's lives become global in scale and consequence. Every act within domestic jurisdiction affecting the welfare of the people will increasingly become exposed to international scrutiny. The Universality of the international human rights norms will bring about great changes in the structure of the domestic governments. The marked crudities of the internal and international economic order will come up for greater international attention and attract greater international concern. These changes will inevitably exert hitherto unforeseen pressures on the centres of learning. Educationists will find themselves suddenly transplanted into a new and exciting scientific world marked by constant change. Western universities, many of them, are intellectual power houses. Scientific research is of a high order. Academic commitment is total and discipline very high. Unfortunately Indian universities, in the quality of their research programme, have not realised and achieved their own potential. The quality of intellectual life is not uniformly bright. There is an increasing air of indiscipline and irreverence. There is an increasing sense of disenchantment with the universities and their ability to contribute to the development of science and technology. There are many reasons for this. The foremost is the disenchantment with the institutions of Indian democracy and the increasing denudation of faith in the institutions of governance. Further, there is marked inequality in the distribution of the blessings of education. Large masses of people justly feel a sense of deprivation of social opportunity.

The important task is free and compulsory elementary education, particularly of the girl child. The inverse proportion between literacy on the one hand and population growth, infant-mortality, maternal-mortality on the other are too well documented to need any further demonstration. Literacy augments productivity, nutritional standards and empowers civil society to exact its due from the political society. Education of women is the key to social empowerment. Statistics have proved this beyond controversy. While in the state of Uttar Pradesh, the percentage of rural girl children in the age group of 12 to 14 who have not been to a school is 68%; in Kerala, in contrast it is just 1.8%. The percentage of child births taking place in hospital in Uttar Pradesh is 4% while in Kerala it is 92%. The percentage of the population receiving the benefit of subsidised cereals under PDS is 3% in Uttar Pradesh while it is 87% in Kerala. This is what literacy, particularly, family literacy can do to empower society. The argument of financial constraint on literacy is specious. Countries economically less well-off have achieved spectacular results in literacy. Indeed, Maqbool-ul-Haq, whose campaign for literacy in the Indian sub-continent was tireless, advised educational institutions to train every undergraduate in 'Education' so that every graduate either in Arts or Science would be a potential teacher of elementary schools.

The crisis in India is the result of failure to sustain institutions of good governance and management. There is on the contrary a pervasive sense of abandon in public administration. The civil and political societies are alienated from each other. In such a situation it would be unrealistic to be astonished if political leadership failed to exhibit a decorous regard to the rules of the constitutional game. When values are abandoned, political leadeship increasingly tends to exploit the anger and dissatisfaction of the people and splinter society into heterogeneous groups pitched in conflict with each other. Institution of good governance and respect for Rule of Law are the only answers to the contemporary chaos we see all around and to the tendency for an amoral majority to render democracy into elective despotism.

In the days of World War, IQ tests were developed by a psychologist at Standford called Lewis Terman. "The IQ ways of thinking has it that people are either smart or not, are born that way, that there's nothing much you can do about it, and that tests can tell you if you are one of the smart ones or not". But there are theories refuting the IQ view; holding that there is not just one monolithic kind of intelligence that is crucial for life's success, but rather a wide spectrum of intelligences, with seven key varieties. One of the components is the 'spatial capacity'. In this scheme of things, IQ plays a small part, just a 20 per cent part in human personality. Emotional, inter-personal-intelligence on the other hand enables one to understand other people and to work cooperatively with them. We need this emotional intelligence for a just society.

The thoughts and actions of men tend to be influenced by some set of general ideas about the nature of the world and man's place in it. This world picture conditions both the scientific temper and the religious culture of the times and furnishes a dim background to the dimensions of curiosity of the times. It is said that the 'Modern Mind' is the product of 17th Century science. That era saw the birth of the modern science as it is understood today and was exposed to the thoughts of Kepler, Galileo and Newton. Several theories of creation and cosmology were put forward. There was the expected and inevitable confrontation between the "technological' and "mechanical" theories of evolution : whether there was 'purpose' or 'consciousness' in evolution or whether it was merely a causative factor. Science is generally associated with 'mechanism' and religion with "Teleology". The discerning of a purpose in evolution was considered unscientific. This scientific temper militated against the religious concept of the world as a moral order and the declaration implicit in it that moral values were objective. Modern Science postulated propositions which were inconsistent with moral values being objective. The new scientific and technological forces in the next century will sharpen this debate. The difficult points of contact between science on the one hand and religion on the other will attract a sharper debate resulting ultimately in a purposeful endeavour to search for a fundamental unity on which all attract a sharper debate resulting ultimately in a purposeful endeavour to search for a fundamental unity on which all postulates of science and philosophy could be explained. Stephen Hawking spoke of this quest. In his *A brief History of Time*, he wrote : "We find ourselves in a bewildering world. We want to make sense of what we

SATYENDRA NATH BOSE NATIONAL CENTRE
FOR BASIC SCIENCES
JD Block, Sector-III, Salt Lake, Calcutta 700 091

**JUNIOR RESEARCH FELLOWSHIP IN BASIC SCIENCES
(1999-2000 SESSION)**

Applications are invited for Junior Research Fellowships at the Satyendranath Bose National Centre for Basic Sciences. The Centre is engaged in research in many frontline areas of the Basic Sciences such as: Condensed Matter Physics, Statistical Physics, Quantum Field Theory, Quantum Optics, Chemical Physics, Mathematical Physics and Astrophysics.

Eligibility : Master's degree in Physics, Chemistry, Applied Mathematics/Engineering Sciences/M. Tech. (with good background in Physics). Candidates currently appearing in their final examinations may also apply.

Admission Test : Admission will be on the basis of academic record and performance in the admission test which will be held during early **June, 1999**. Candidates will be notified of the exact date. The session will commence in **August, 1999**.

Travel allowance : Candidates called for the admission test will be reimbursed return second class Railway fare from their normal place of residence and will be paid DA as per rules of the Centre.

First Year of Fellowship : Selected students will have to complete one year of course work successfully prior to pursuing their doctoral research at the Centre. This Post M.Sc. Associateship Course will be carried out concurrently and jointly with the Saha Institute of Nuclear Physics, Calcutta.

The Fellowship : The fellowship will be Rs. 5000/- per month with Rs. 1500/- HRA according to rules.

Applications on plain paper and including a detailed bio-data, indicating marks or percentages in competitive examinations and at least one confidential reference letter must reach the Office of the Dean (Academic Programme) on or before 19th May, 1999.

**ABHIJIT MOOKERJEE
DEAN (ACADEMIC PROGRAMME)
Fax : 33-334 3477
E-Mail : abhijit@boson.bose.res.in**

see around us and to ask : what is our place in it and where did it and we come from? Why is it the way it is?"

Ultimately science and philosophy will achieve clearer versions of the higher absolutes that serve as impelling forces in science, philosophy and religion. It will increasingly come to be realised that great truths of this all pervasive unity are not amenable to mere sensory perception or to the field of reason, for, the logical mind is unable to perceive this ultimate reality. "The field of reason, or of the conscious workings of the mind" said Swami Vivekananda "is narrow and limited. There is a little circle within which human reason must move. It cannot go beyond. Every attempt to go beyond is impossible, yet it is beyond the circle of reasons that there lies all that humanity holds most dear. All these questions, whether there is an immortal soul, whether there is a God, questions, whether there is any Supreme intelligence guiding this universe or not, are beyond the field of reason. Reason can never answer these questions".

There will thus be a new yearning for the discovery of this higher moral order. In this inevitable search it will increasingly be envisioned that impersonal love of all mankind, goodness for goodness' sake, reverence for all life are the foundations of morality and justice.

Swami Siddheshwarananda, a former member of the Cochin Royal Family, who became a monk of the Sri Ramakrishna Mission and went to France in 1937, in his work in French on "Hindu Thought and Carmelite Mysticism", made some profound observations on Religion and Spiritually, "Religion erects barriers between men because it rests on concepts which are provocative slogans and rallying points. That is why there cannot be amity between particular religions if one considers doctrinal and theoretical values. The word "Spirituality", is closer to our ideas, is of a more universal order; it designates this life which expands slowly in the deepest part of ourselves and which is indefinable because it is ceaselessly renewed. All its manifestations (symbols, ideas, beliefs) are only its changing envelope, according to the different doctrines and notions which men form of God when they think about the problem of salvation. But if we take the word "religon" "as signifying human efforts to realize the highest level of consciousness, a transformation of being, then we discover at the innermost recess of the different religions, however different outwardly, a true oneness of aspiration, a completion in the sense of blossoming of the soul — a conversion, in short, which transforms the animal that was man into a divine being in whatever religion he belongs to, to the extent that his religion does not consist in vain discussion, polemics, and subtleties."

This is the way to re-establish the morality of aesthetics, desist from surrendering to agnosticism and cease to worship doubt. Definition of justice, truth, beauty and goodness need not be provisional subject to revision as we plod our way through the wilderness of life's experience; but remain substantial anchors for moral sublimity. One of France's greatest humanists and writers Anatole France said, "Truth possesses within herself a penetrating force unknown alike to error and falsehood. I say truth and you must understand my meaning. For the beautiful words truth and justice need not be defined in order to be understood in their true sense. They bear within them a shining beauty and heavenly light. I firmly believe in the triumph of truth and justice that is what upholds me in times of trial."

UNIVERSITY OF DELHI
FACULTY OF LAW
ADMISSION NOTICE

The University will conduct two separate Entrance Tests at Delhi for admission to first year of LL.B. (Three year course) and LL.M. 2 yr./3 yr. Courses 1999-2000 in the Faculty of Law as per the following details :-

LL.B. : Date of Entrance Test : Sunday, 4 July, 1999
Eligibility : Graduate/Post-Graduate Degree with 45% marks (Pass marks for SC/ST candidates).
LL.M. : Date of Entrance Test : Sunday, 11 July, 1999
Eligibility : LL.B. Degree with 50% marks (45% marks for SC/ST candidates).

Note : Candidates appearing in the qualifying degree examination or awaiting results of any such examination are also eligible to appear in LL.B./LL.M. Entrance Test but no candidate shall be considered for admission unless he/she has secured the minimum marks prescribed as above.

Prospectus containing detailed rules alongwith prescribed Application Form may be obtained from 3 May, 1999 to 11 June, 1999 between 10 am to 1 pm on any working day from Convenor, Admission Committee, Faculty of Law, University of Delhi, Delhi-110 007 by paying Rs. 100/- in cash at the counter or by mailing a Bank Draft of Rs. 125/- in favour of Dean, Faculty of Law, University of Delhi, payable at Delhi.

No request for sending prospectus by post shall be entertained after 1 June, 1999.

Last date for receipt of applications with a Bank Draft of Rs. 400/- (Rs. 100/- for SC/ST) in favour of Registrar, University of Delhi payable at Delhi is 11 June, 1999 (without late fee) and 18 June, 1999 (with late fee of Rs. 100/-)

Shri N. S. Bawa, Convenor Prof. A. K. Koul, Dean

Need for Technology-based Training

Apart from conventional sources like books and journals, modern learning processes will have to be supplemented by extensive use of technology-based training, the AICTE Chairman, Dr. S. Rame Gowda has said. Conventional methods of learning and training would not help keep abreast of the changes taking place in various fields which influence process designing and product manufacturing. Normal books and journals should be supplemented by extensive use of internet facilities, interactive computers and a host of digital gadgets, all commonly referred to as technology-based training. Dr. Rame Gowda was delivering the convocation address of Sri Chandrasekarendra Saraswathi Viswa Mahavidyalaya (Deemed University), Enathur, in Chennai recently.

Everyone, whether a Sanskrit teacher or a computer teacher, should get used to browsing through the Internet, day in day out, to know the happenings in their fields of study. Only this would make sure that one could cope with the demands of his or her job and be productive for the employers, he said.

He said the new graduates should not be carried away always by ranks or medals, or fall prey to the temptation of living in past glory or turn lethargic to everyday challenges. Real learning began only in the outside world, after the university, where the scenario was fast and dominated by knowledge. This called for multi-discipline expertise among youngsters, he said.

Dr. Rame Gowda lauded the institution for teaching social and natural sciences, management and engineering, along with Sanskrit. The university had demonstrated the capability to blend science with spirituality and proved that it was possible in the fast changing world to prepare youngsters to cope with the increasing socio-economic and technological challenges on the bed rock of moral and ethical values propounded in the ancient scriptures. The Deemed University Chancellor, Prof. G.J.V.J. Raju, stressed the need to modernise the process of converting information into knowledge. This should be done both in the classroom and in the library. Networks of high quality information and creation of virtual library to share information were required to help students share information and attain innovative ideals.

He said the university developed an integrated personality among students. It had introduced modern trends and latest developments in the curriculum, even while stressing the importance of India's ancient culture and heritage.

Dr. N. Shankar, Vice-Chancellor, who welcomed the gathering, revealed that the university had eight courses and Ph.D. in Sanskrit, with a total of 984 students in the Enathur and Nazarethpet Ayurvedic College campuses and at the Pammal and Tambaram centres. It had sought AICTE permission to start three engineering courses. A master plan envisaged a phased development of the campus at Enathur and the Ayurvedic hospital with staff quarters, stadium, hostels, buildings for mechanical and computer sciences, auditorium etc, at a cost of Rs. 15 crores.

A full-fledged medical college was on the anvil. It also planned to provide opportunities to the community to learn Sanskrit, Vedas, Agamas and even fine arts at various centres, said Dr. Shankar.

DST Evolves New Cost-effective Technology

A technology-based programme, "Intelligent Processing of Materials" (IPM), formulated by the Department of Science and Technology (DST) for the benefit of industry is believed to be the only one of its kind in the world, according to the Indira Gandhi Centre for Atomic Research (IGCAR), headed by the Director of the Materials Management Group (MMG), Dr. Baldev Raj.

Its successful adoption by the Mysore city based Raman Boards Limited (RBL), stated to be one of the eight units engaged in the manufacture of cellulose transformer insulation in the world, has inspired other industries to use IPM in their units. Mysore is the first city in the country to adopt the programme.

Mr. K. Balakrishnan, General Manager (Operations), RBL, said there were a number of research and development institutions of the Union Government operating under the aegis of the Council for Scientific and Industrial Research (CSIR), the Indian Council for Agricultural Research (ICAR), the DST and the Department of Atomic Energy (DAE), which were striving to ensure that technological development and expertise developed were made available to industry or agriculture under a time-bound programme. Another challenge was to make technologies cost-effective to make them accessible to a wider section of trade and agriculture.

Research conducted in the CSIR and the ICAR laboratories was being transferred to users in a structured manner.

However, research done under the auspices of the DAE, the DST and the Department of Space (DoS) is directed primarily to applications in nuclear energy and space programme.

The work carried out is at the leading edge of technology and perceived to be "esoteric." Therefore, few domestic industries viewed these technologies as something that was relevant to them.

However, the DST felt that while many technologies evolved or expertise gained were primarily meant for atomic energy or space applications, nevertheless, many of them could also be useful and cost-effective in industry.

Thus, the DST formulated the IPM to provide a formal mechanism to transfer these technologies, upgrade the technical base of and to enhance competitiveness in Indian industry, which would enable it to meet the challenge posed by globalisation.

Under this programme of the IGCAR in Kalpakkam, the MMG has made available a number of processing materials and quality analysis and control techniques to interested industrial users.

The objective of the IBM programme, Mr. Balakrishnan said, was to ensure that the quality of new material being processed by a manufacturing unit was maintained during the processing stage.

Data analysed and corrections to the process, if any, could be carried out immediately so that waste due to rejections was eliminated.

Prof. V.S. Ramamurthy, Secretary of DST, who was in Mysore recently, handed over the first successful project under the TPM to RBI.

This project was triggered by two professors of the Indian Institute of Science, Bangalore, and carried out by Dr. Baldev Raj and his team at the IGCAR.

The system used a novel application of the "eddy current" testing principle, which thus far had been applied to the detection of faults in a metallic structure. The uniqueness of the IGCAR-developed system was that the "eddy current" principle was used to detect the presence of metallic particles in a non-metallic substrate.

NTR Health Varsity to Set Up Cyber Network

The NTR University of Health Science proposes to set up a massive cyber network linking the university with all the medical colleges in the State to improve its information technology.

The computerised network would help the students and the medical fraternity to browse through the various medical literature sitting at one place, saving both time and money. This was revealed by Prof. G. Shyam Sunder, Vice-Chancellor of the university, at the national conference, 'Medical Informatics', organised by the Institute of Public Enterprise in Hyderabad.

He said that training in computer education, both at the undergraduate and postgraduate level, were becoming increasing by essential in view of its various advantages. Union Health and Family Welfare Secretary K.K. Bakshi in his valedictory address said that computer technology based on the silicon chip was going to be benefited and further advanced by the knowledge of the biological system in the form of biochip.

"Different biochips of DNA and protein are being explored and developed to identify different defective genes for the diagnosis of hereditary and other diseases and also identify suitable drugs for their treatment", he said.

Manonmaniam Varsity Convocation

Prof. V.C. Kulandaiswamy, former Vice-Chancellor, IGNOU, Anna and Madurai-Kamaraj Universities, expressed serious concern at the state of the university system and higher education in Tamil Nadu and pleaded for the appointment of a high power committee to review the same. He was delivering his address at the sixth convocation of the Manonmaniam Sundaranar University in Tirunelveli recently.

Prof. Kulandaiswamy took exception to the "confused thinking" on financing of higher education and said that from the first to the seventh Five Year Plans, the average allocation for higher education was 17.3 percent of the funds earmarked for education, but in the Eighth Plan it came down to eight per cent. The cut in the allocation for higher education was attributed to the large allocation for primary education.

No one will ever dispute increased allocation for primary education. But that did not mean that it had to be done at the cost of higher education. The highest education for a few was important as

(Contd. on page 22)

Representation of Women in teaching positions in the Indian Universities (Based on information from 61 Universities)

S. No.	State	Data for No. of Universities	Lecturers			Readers			Professors			Total		
			M	F	T	M	F	T	M	F	T	M	F	T
1.	Andhra Pradesh	7	865	314 (27)	1179	570	195 (25)	765	361	226 (39)	587	1796	735 (29)	2531
2.	Assam	2	130	50 (28)	180	98	34 (26)	132	106	16 (13)	122	334	100 (23)	434
3.	Chandigarh	1	99	92 (48)	191	205	74 (27)	279	142	23 (14)	165	446	189 (30)	635
4.	Delhi	1	112	18 (14)	130	57	1 (2)	58	17	6 (26)	23	186	25 (12)	211
5.	Gujarat	3	503	152 (23)	655	267	59 (18)	326	186	19 (9)	205	956	230 (19)	1186
6.	Haryana	2	364	191 (34)	555	120	25 (17)	145	124	11 (8)	135	608	227 (27)	835
7.	Himachal Pradesh	1	255	64 (20)	319	107	19 (15)	126	73	10 (12)	83	435	93 (18)	528
8.	Kashmir	1	84	31 (27)	115	53	6 (10)	59	22	— (0)	22	159	37 (19)	196
9.	Karnataka	5	470	120 (20)	590	287	67 (19)	354	358	59 (14)	417	1115	246 (18)	1361
10.	Kerala	2	144	81 (36)	225	116	17 (13)	133	45	14 (24)	59	305	112 (27)	417
11.	Madhya Pradesh	4	323	105 (25)	428	133	15 (10)	148	63	1 (2)	64	519	121 (19)	640
12.	Maharashtra	6	401	405 (50)	806	277	102 (27)	379	153	40 (21)	193	831	547 (40)	1378
13.	Manipur	1	53	20 (27)	73	40	5 (11)	45	45	4 (8)	49	138	29 (17)	167
14.	Orissa	1	38	12 (24)	50	39	2 (5)	41	30	1 (3)	31	107	15 (12)	122
15.	Pondicherry	1	45	16 (26)	61	63	5 (7)	68	14	— (0)	14	122	21 (15)	143
16.	Panjab	1	169	143 (46)	312	98	23 (19)	121	70	6 (8)	76	337	172 (34)	509
17.	Rajasthan	3	238	155 (39)	393	159	28 (15)	187	42	4 (9)	46	439	187 (30)	626
18.	Tamil Nadu	7	533	296 (36)	829	427	87 (17)	514	250	31 (11)	281	1210	414 (25)	1624
19.	Tripura	1	31	6 (16)	37	17	1 (6)	18	8	— (0)	8	56	7 (11)	63
20.	Uttar Pradesh	7	338	66 (16)	404	203	57 (22)	260	253	9 (3)	262	794	132 (14)	926
21.	West Bengal	4	534	86 (14)	620	443	48 (10)	491	408	26 (6)	434	1385	160 (10)	1545
	Total	61	5729	2423 (30)	8152	3779	870 (19)	4649	2770	506 (15)	3276	12278	3799 (24)	16077

Note : i) Figures given in parenthesis represent percentage of women teachers.
ii) The table is based on information provided in "Performance of the University during the VIIIth Plan" submitted by various universities to UGC in 1997.
(Data compiled by Veena Bhalla and Usha Rai Negi, Association of Indian Universities, New Delhi-110 002.)

Level of Qualification of Women Research and Development Personnel

(Number)

lification	1978	1980	1984	1986	1988	1992
D.	311	378	533	858	664	1260
Graduates	772	1246	1332	1502	1727	3111
duates	503	846	957	1070	1227	2205
oma Holders	131	186	443	408	385	731
ers	204	240	387	537	890	430
	1921	2896	3652	4375	4893	7737

Level of Qualification of Women Research and Development Personnel by Major Sector

(Number)

	Institutional Sector			Industrial Sector			Total		
fication	1986	1988	1992	1986	1988	1992	1986	1988	1992
	780	586	1042	78	78	218	858	664	1260
raduates	1213	1335	2293	289	392	818	1502	1727	3111
uates	586	544	1104	484	683	1101	1070	1227	2205
ma Holders	212	243	445	196	142	286	408	385	731
s	180	645	179	357	245	251	537	890	430
	2971	3353	5063	1404	1540	2624	4375	4893	7737

1. As on 1st April.
2. Data for which break-up available is reported.
3. Excluding Higher Education Sector.

Science & Technology Pocket Data Book 1995, Department of Science & Technology, Govt. of India, New Delhi.

(Contd. from page 19)

the basic education for all in a large country like India. He said the Department of Economic Affairs had classified higher education as non-merit service and had suggested reduction in the subsidy from the present 90 per cent to 25 per cent over a period of five years. This viewpoint was completely ill-informed and had in it the potential for disastrous consequences. The allocation for S and T research had been continuously decreasing and was a very paltry 0.81 per cent of the GNP in 1994-95, he pointed out.

The organisational structure of the varsities had long become 'out-dated'. The basic framework was developed when the universities performed only affiliating functions. The UGC appointed a couple of committees in the last four decades to examine the governance of universities. But no change had taken place, despite the reports of these committees.

In this regard he said no developing nation could allow its University soil to become arid without endangering the future of its youth. Stressing the need for strong commitment to S and T, Prof. Kulandaiswamy observed that the advanced countries had become affluent not because of the discovery of any new natural resource, but because of their supremacy of knowledge in S and T etc. The need of the hour to make the country a developed one was to arm it with technology.

Dr. K.P. Aravaanan, Vice-Chancellor, in his report said within a short span of time, the University has been in the forefront, ushering in several innovative educational methods. The University had planned to introduce two new courses, MBA and Master in Library and Information Science, shortly.

Ms. M. Fathima Beevi, Governor of Tamil Nadu and the Chancellor of the University, presided over the convocation and presented Ph.D. degrees to 49 candidates. She also presented degrees and medals to 77 University rank holders in the PG and UG courses. A total of 11,476 candidates received their degrees in absentia.

Sir Visvesvaraya & Sir Raman Awards

Three scientists have been selected for the "Sir M. Visvesvaraya Award for Lifetime Achievement" instituted by the Government of Karnataka. They are Dr. K.N. Raju, former Director of NAL, Professor A.R. Vasudeva Murthy of the Department of Inorganic Chemistry, Indian Institute of Science (IISc), and Professor G. Suryan from the Department of Physics, IISc.

In addition, the following have been selected for the Sir C.V. Raman Award for young scientists in different disciplines : Dr. H. Shivananda Murthy, UAS, Mangalore, for Life Science; Dr. B. N. Gangadhar of NIMHANS, Bangalore for Medical Science; Dr. Shailaja Hittalmani, UAS, Bangalore, for Agricultural Science and Animal Husbandry; Dr. K. Byrappa, University of Mysore for Physical Science; Dr. R. Shankar of Mangalore University for Earth Science; Dr. S. Yashonath of IISc, Bangalore, for Chemical Science; Dr. D. Bhattacharya and Dr. A.A. Deshpande, RRI, Bangalore, for Space Science; Dr. Y. Narahari, IISc, and Mr. M.D.R. Prasad, ADA, Bangalore, for Computer Science; Dr. A.K. Sharma of ISRO and Mr. Shyam Chetty of NAL for Engineering Science.

News from Agricultural Universities

ICAR Meet at HAU

The two-day regional meet of the Indian Council of Agricultural Research (ICAR) which concluded recently at the CCS Haryana Agricultural University, discussed the problems of rising and folling water table, soil salinity and the spread of phalaris minor.

Presenting the ground water situation in Haryana, experts from HAU pointed out that during the past 20 years the water table in Ambala, Yamunanagar, Kurukshetra and Rewari districts had gone down at an alarming rate, while in Rohtak, Jind, Hisar, Sirsa, Bhiwani, Fatehabad and parts of Sonepat districts it had risen at an average annual rate of 10 to 30 cm.

They said the problem was accompanied by the secondary soil salinity which was severely affecting the crop yield.

Similarly, HAU scientists also cautioned against the spread of the phalaris minor weed in the region. They pointed out that of about two million hectare of the total are a under wheat cultivation, the presence of this weed had been noticed in about five lakh hectares. They said, the weed had been found in paddy-wheat rotation belt, which, in absence of an effective weedicide, was seriously affecting the yield.

The regional meet of the ICAR was attended by representatives from Rajasthan, Gujarat, Daman Diu, Nagar Haveli, as the area shared common agro-climatic conditions.

Suggesting the remedial measures, the Vice-Chancellor of HAU, Prof. J.B. Chaudhury, sought liberal financial assistance from the ICAR for tackling such problems. He said the Haryana Government had accorded top priority to solving the problem of water logging and a masterplan had been approved which was likely to cost about Rs. 2300 crore. Since the amount of expenditure was huge, it had been proposed to seek assistance from the Union Agriculture Ministry and Central Irrigation and Wasteland Development Board for providing financial aid.

News from UGC

Countrywide Classroom Programme

Between 8th and 14th May, 1999 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programmes are telecast on the Doordarshan's National Network from 9.30 to 10.00 a.m. every day except on Saturdays & Sundays. These programmes are also telecast on Doordarshan's National Network from 6.00 to 6.30 a.m. two days a week i.e. on Saturdays and Sundays. On DD2 International Programme will be shown at 11.00 to 12.00 hours on Saturdays only.

Hindi Programmes are being telecast on Mondays to Fridays from 6.00 to 6.30 a.m.

8.5.99
"Jazz-1"
"International Programmes"
9.5.99
"Aurad-i Fathiyya — A Kashmiri Muslim : Ritual as a Source of History"
10.5.99
"Physics of Thermoluminescence"
"Chaos — Kitchen & Chapati"
"Roaming TV Quiz-Thomas Alva Edison"
11.5.99
"Career Stress-3 : We've Overcome"
"Glimpses of India-6 : Himalaya"
"Biofarming ... In Dialogue with Nature"
12.5.99
"Enroute to Fabric Queen"
"Moving into the Audible"
"Skinning Mother Nature"
13.5.99
"Winds of Change-2 : Women in Rural Development"
"Touch of Genius"
"Question Time-101"
"Bharatanatyam-1"
14.5.99
"Numismatic Pleasure"
"Expedition Everest-2"
"Touch of Genius"

Hindi Telecast

प्रातः 6.00 से 6.30 बजे तक

9.5.99
"महायात्रा : गंगोत्री–2"
10.5.99
"कम्प्यूटर : एक परिचय"
11.5.99
"उन्नत स्वास्थ्य की ओर : मक्खी नियंत्रण"
12.5.99
"आँवला"
14.5.99
"मामा बालेश्वर दयाल : भीलों के मसीहा"

News from Abroad

NRI Endowments at Canadian Varsities

A Montreal-based businessman of Indian origin is reported to have donated $ 500,000 to two Canadian universities which will be used to grant scholarships to South Asian and minority community students.

Mr. Baljit Chadha donated the amount which will be used to establish two endowments of $ 2,50,000 each at the McGil and Concordia Universities. To begin with, 10 scholarships of $ 2,500 each will be granted out of these endowments to undergraduate South Asia students, minority community students and others.

The scholarships will be awarded to deserving students and the selection will also be based on merit, said Mr. Balbir Sawhney, a professor at Concordia University.

The objective of these endowments "is to support Indo-Canadians, visible minorities and others in their pursuit of higher education," Mr. Sawhney said.

Mr. Sawhney said that letters had already been exchanged between the Chadha Family Foundation and the two universities. The foundation wanted to start 50 such scholarships and extend it to the whole of Canada, he said.

"The Indo-Canadian community, having faced difficulties in the early years of its "continuous journey" has come to play an important role in the mainstream of Canadian society," Mr. Sawhney said. "Active participation in religious and cultural activities within and outside the Indo-Canadian community is well manifest in the multicultural mosaic of Canada," he said.

"With the establishment of the scholarship endowments, the community has launched a process of supporting students in their studies," he noted.

BOOK REVIEW

A Testament of Faith

K. Vaman*

Keshav Rao, Man, Woman and God : The Power of the Cobra, (Ashirvad, Mahanavami Circle, Mangalore-575 002.) 1998, Pp. 678, Rs. 280/-.

Keshav Rao's philosophic fiction, *Man, Woman and God*, published by the Felicitation Committee consisting of his old students and well wishers is a work of scintillating brilliance. The author, whose years of teaching service were mostly spent in the colleges of Dakshina Kannada, Kodagu and Udupi districts, is a renowned teacher of English, and a bilingual writer. He has seven books in Kannada, and two in English to his credit. In the present volume, his latest, he has experimented with quite a few techniques like a single day's happening in the life of the protagonist with flashbacks, window of consciousness narration, as also that of stream of consciousness, in some measure. The maintaining of the unities to the best extent feasible, and the initial philosophical exposition after the manner of Sartre and others are the highlights. The quest is fashioned after the thrilling fashion of Steven Spielberg, and the denouement is modelled very warmly with an admixture of fact, fiction and philosophy. Quite a few speculations pertaining to the realm of Metaphysics, especially with reference to Ontology and above all, a splendid portraiture of God, through a blend of the intellectual and mystical gazes, are intellectually electrifying. The somewhat tedious exposition is fascinatingly and cosily made up by the middle and the concluding parts.

The focal point of issue or the main bearing of this totally new and unique volume is the age-old theme of Good and Evil. Though there is an element of mystery round those subjects, the ontological essence of God, and the teleological significance of life, Keshav Rao, in the style of Mulk Raj Anand and others, offers his own solution to the problem of Evil and suffering which confront human life. Collective endeavour or congregated might is the author's challenge to the devastating power of Evil. For how many among us can stand alone, and what load of burden can be thrown upon the shoulders of God?

The book consists of many gems of thought chosen from the store-houses of knowledge of the East and the West, with a glorious synthesis of the two. There is a beautiful transendental touch of both language and content. The style, though pedagogic, is exclusively meant for the university don, and the discriminating reader. This special volume, which has a cosmic canvas, and which debates many a subtle point belonging to the frontiers of religion, literature, metaphysics, ethics, psychology and cosmology, possesses a non controversial aroma thereby making it universally acceptable. Keshav Rao censures, but very rationally; he also applauds, that too very scientifically. He equates the quintessence of God with Science; yet shapes him marvellously in the garb of *Sat Cit Ananda*.

The book is written by way of a Testament of Faith. It is part autobiography and part fiction, what the author is, and what he dreams to become. Professor Jogendra turns Swami Prajnananda, after nine years of his Himalayan rendezvous, into a dynamic yogi with a tremendous social commitment. His Solidarity League with its headquarters at Nariman Point, Bombay, is a conglomeration of his dedicated and patriotic-minded students and ex-students. The antogonist, Sanatam, the underworld king, a former student of Professor Jogendra, and his team are laid low by the League. Sanatam himself is vanquished by the Professor in a most thrilling contest, in which Swami Prajnananda makes use of his newly-acquired, devastating Serpent Power, termed *Kundalini* in Sanskrit. In scientific terminology *Kundalini* is the power of our controlled sympathetic nervous potentiality.

One may wonder whether a redeemer need only to be a Himalayan *Yogi*. The author categorically denies and says that it is just an example. A revolution and the birth of a leader are the fruits of a particular soil, peculiar to its ingredients of tradition and culture — a Lincoln, a Gandhi, a Lenin, or a Jogendra. Keshav Rao's book ought to be a precious possession of every home, all over the world, especially in India, our own land. *Man, Woman and God* is a book of international value, for reasons more than one. The author, in envisaging the philosophy of Pragmatic idealism, shapes himself as a philosopher — thinker of the future.

**Asstt. Librarian,*
Mangalore University Library,
Mangalore-574 199.

THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities December 1998 - January 1999)

AGRICULTURAL AND VETERINARY SCIENCES

Agriculture Science

1. Nagpura, Shivaji Chaitram. **Economic analysis of selected forest plantation species in Maharashtra State.** (Dr H N Patil), Department of Agriculture Science, Marathwada Agricultural University, Parbhanim.

Forestry

1. J H Lalramnghinglova. **Studies on plants of ethno-botanical importance in the tropical wet evergreen forests of Mizoram.** (Prof L K Jha), Department of Forestry, North Eastern Hill University, Shillong.

Veterinary Sciences

1. Baskaran Ravi Latha. **Immunological strategies in the control of ixodid ticks.** (Dr G Rajavelu), Department of Veterinary Sciences, Tamil Nadu Veterinary and Animal Sciences University, Chennai.

2. Dilip Kumar D. **Obstructive disorders of alimentary tract radiographic and endoscopic evaluation and their surgical correction in dogs.** (Dr Ameerjan), Department of Veterinary Sciences, Tamil Nadu Veterinary and Animal Sciences University, Chennai.

3. Harikrishnan, T J. **Antigenic profile of isolates of theileria annulata.** (Dr D Jeyaseelan Chellappa), Department of Veterinary Sciences, Tamil Nadu Veterinary and Animal Sciences University, Chennai.

4. Milind Gonduji Thorat. **Comparative study of induced penetrating and non-penetrating syndrome in bovine.** Department of Veterinary Surgery, Dr Punjabrao Deshmukh Krishi Vidyapeeth, Akola.

5. Parida, Satyanarayan. **Histocenesis, histomorphology and histochemistry of the female reproductive system of japanese quail (coturnix coturnix japonica).** (Dr C Vijayaraghavan), Department of Veterinary Sciences, Tamil Nadu Veterinary and Animal Sciences University, Chennai.

6. Ranganath, L. **Comparative evaluation of renal affections by ultrasonography and radiography in dogs.** (Dr W P Archibald Balraj David), Department of Veterinary Sciences, Tamil Nadu Veterinary and Animal Sciences University, Chennai.

BIOLOGICAL SCIENCES

Biology

1. Harbans Kaur. **Demographic survey with special reference to health care systems in Punjab — A comparative study of rural and urban areas.** (Dr D P Bhatnagar), Department of Human Biology, Punjabi University, Patiala.

2. Zora Singh. **Developmental age in jat-sikh boys from 5 to 20 with special reference to skeletal, sexual and dental maturity.** (Prof L S Sidhu), Department of Biology, Punjabi University, Patiala.

Biotechnology

1. Adhuna. **Evaluation of stress response during leishmania donovani macrophage interaction.** (Prof Rakesh Bhatnagar), Department of Biotechnology, Jawaharlal Nehru University, New Delhi.

2. Dalai, Sarat Kumar. **TH1 and TH2 profiles of asymptomatic amicrofilaremic individuals in bancroftian filariasis.** (Dr Santosh K Kar), Department of Biotechnology, Jawaharlal Nehru University, New Delhi.

Botany

1. Bhavsar, Vilas Vasant. **Study of isonuclear hybrids involving diverse cytoplasms in sorghum.** (Dr S T Borikar), Department of Botany, Marathwada Agricultural University, Parbhani.

2. Gayathri, Suthram. **Evaluation of some indigenous strains of colletorichum dematium (Pers ExFr) grove. For the managment of parthenium hysterophorus L.** (Dr A K Pandey), Department of Botany, Rani Durgavati Vishwavidyalaya, Jabalpur.

3. Hardip Kaur. **Morpho-physiological studies on growth and development of certain species of araucaria and podocarpus.** (Dr P Kumar), Department of Botany, Punjabi University, Patiala.

4. Jagdeo, Pahurkar Ashutosh. **Ground vegetation boi-content and net primary production in deciduous woodland.** (Dr B R Pandit), Department of Botany, Bhavnagar University, Bhavnagar.

5. Mary Ann George. **Studies on airborne algal and fungal forms and their possible role as allergens.** (Dr K S Verma), Department of Botany, Rani Durgavati Vishwavidyalaya, Jabalpur.

6. Parveen, Asma. **Studies on allelopathic behaviour of certain weeds in relation to potential for weed management.** (Prof M Wajid Khan), Department of Botany, Aligarh Muslim University, Aligarh.

7. Shivananjaiah. **The structural studies of mega and microfossils occuring in lower Gondwana strata of Maharashtra State.** (Dr P R Nanjunda Gowda), Department of Botany, Bangalore University, Bangalore.

8. Tippeswamy T. **Studies on the effect of foliar application of micronutrients on yield and quality of mulberry (Morus SPP).** (Dr S Chakrabarthi), Department of Botany, University of Mysore, Mysore

Life Sciences

1. Ayekpam Premila Devi. **Indoor aerobiology of certain working environments in Imphal area, Manipur.** (Prof N Irabanta Singh), Department of Life Sciences, Manipur University, Manipur.

2. Singh, Athokpam Herojit. **Sulphur status of the cultivated soils of Manipur.** (Dr A Ibopishak Singh), Department of Life Sciences, Manipur University, Manipur.

Microbiology

1. Lal, Sangeeta. **Studies on the biodegradation of keratin by some actionomycetes.** (Dr S K Masija and Dr R C Rajak), Department of Microbiology, Rani Durgavati Vishvavidyalaya, Jabalpur.

Molecular Biology

1. Raman, B. **Molecular chaperone like activity of alpha crystallin.** (Dr Mohan Rao), Department of Molecular Biology, Jawaharlal Nehru University, New Delhi.

Sericulture

1. Shivashankarappa, L H. **A comparative evaluation of diflubenzuron and its application for the control of Uzi fly, exorista sorbillans wied.** (Dr H P Puttaraju), Department of Sericulture, Bangalore University, Bangalore.

Zoology

1. Anuradha, C H. **Physiological and Histopathological changes in freshwater fish anabas scandens (Cuvier) subjected to selenium toxicity.** (Dr T Nagaraju), Department of Zoology, Osmania University, Hyderabad.

2. Bharti, Himender. **Taxonomic revision of subfamily tenthredininae (sans : pachyprotasis) (hymenoptera : symphyta : tenthredinidae) from India.** (Dr M S Saini), Department of Zoology, Punjabi University, Patiala.

3. Jayshri Mardenia Nee Jayshri Pachori. **Investigations on suitability of rat as a model for study of immune response to bovine spermatozoa.** (Dr S K Jain), Department of Zoology, Rani Durgavati Vishwavidyalaya, Jabalpur.

4. K Sujatha, **Studies on silkworm rearing in relation to improvement of yield in multivoltine race Bombyx mori, L.** (Prof A Purushotham Rao), Department of Zoology, Kakatiya University, Warangal.

5. Karanth, Subramanya. **Biochemical action of organophosphorus insecticides in the adult and young rats.** (Dr Shivanandappa T), Department of Zoology, University of Mysore, Mysore.

6. Lakshmi, Y. **Biochemical and immunological studies of Thai sacbroad virus disease of the Indian honeybee apis cerana indica F.** (Dr C Chandrashekar Reddy), Department of Zoology, Bangalore University, Bangalore.

7. Panikkar, Preetha. **Nutritional aspects of freshwater prawn culture.** (Dr S P Ayyar), Department of Zoology, Bangalore University, Bangalore.

8. Prasanta Kumar Maiti, **Dimethoate and fenvalerate toxicity on the thyroid function in chicken and mouse with special reference to L-thyroxine 5' monodeiodinase enzyme activity.** Department of Zoology, Devi Ahilya Vishwavidyalaya, Indore.

9. Reddy, B Komura. **Structure and function of soil arthropod communities in Tectona grandis Linn f and Diospyros melanoxylon Roxb.** (Dr M Vikram Reddy), Department of Zoology, Kakatiya University, Warangal.

10. Sharma, Narinder **Taxonomic studies on the family satyridae (Lepidopteraditrysiapapilionoidea) of North West India with empahsis on external genitalia.** (Dr H S Rose), Department of Zoology, Punjabi University, Patiala.

EARTH SYSTEM SCIENCES

Environmental Sciences

1. Adiseshu, Gidugu. **Ecological aspects of weed flora of sugarcane fields at anakapalle.** Department of Environmental Science, Andhra University, Waltair.

2. Bhosle, A B **Systematic studies and analysis of some heavy metals from Godavari river at Nanded and its ecophysiological impact.** (Dr P M Patil), Department of Environmental Science, Swami Ramanand Teerth Marathwada University, Nanded.

3. Patil, S R. **Econlogical studies on the river Tunga in Shimoga city starting from the Tunga Reservoir (Gajnur).** (Dr E T Puttaiah), Department of Environmental Sciences, Kuvempu University, Shimoga.

Geology

1. Raghuramu, Maddukuri. **Mineralogy and geochemistry of CALC-silicate granulites from Jidiguppa in the Eastern Ghats Granulite Belt, India.** (Prof A T Rao), Department of Geology, Andhra University, Waltair.

2. Rao, Prakasa J. **Environmental evaluation of ground water quality of a developing urban area of Andhra Pradesh, India.** (Dr N Subba Rao), Department of Geology, Andhra University, Waltair.

ENGINEERING SCIENCES

Applied Mechanics

1. Ansari, Raisuddin. **Normal and oblique impact of projectiles on single and layered thin plates.** (Dr S K Gupta and Prof N K Gupta), Department of Applied Mechanics, Indian Institute of Technology, New Delhi.

2. Prasad, G L Easwara. **Axial collapse of rotationally symmetric shells** (Prof N K Gupta and Dr S K Gupta), Department of Applied Mechanics, Indian Institute of Technology, New Delhi.

3. Sahambi, Jyotindra Singh. **Wavelet transforms for ECG characterization.** (Prof S N Tandon), Department of Applied-Mechanics, Indian Institute of Technology, New Delhi.

Civil Engineering

1. Agrawal, Abhijit Kumar. **Seismic response of secondary systems mounted over torsionally coupled primary system** (Prof T K Datta), Department of Civil Engineering, Indian Institute of Technology, New Delhi.

Computer and Systems Sciences

1. Gupta, Sangeeta. **Delay optimal mutual exclusion algorithms in distributed systems.** (Prof P C Saxena), Department of Computer and Systems Sciences, Jawaharlal Nehru University, New Delhi.

2. Kirti Singh. **New trends in cell placement techniques as part of IC layout design methodologies.** Department of Computer Sciences, Devi Ahilya Vishwavidyalaya, Indore.

MATHEMATICAL SCIENCES

Mathematics

1. Bhattacharya, Debasish. **On some generalizations of realcompact spaces.** (Dr R N Bhaumik), Department of Mathematics, Tripura University, Agartala.

2. Manohar S. **Some inverse problems in fluid mechanics.** (Prof K Appala Raju), Department of Mathematics, Kakatiya University, Warangal.

3. Murty, Y Narasimha. **Through flow effect on convective instabilities in micropolar fluids.** (Prof V V Ramana Rao), Department of Mathematics, Andhra University, Waltair.

Statistics

1. Rao, V V V S Prakasa. **Some manpower models in discrete time with truncated and compound distributions.** (Dr M Vivekananda Murthy), Department of Statistics, Andhra University, Waltair.

MEDICAL SCIENCES

Genetics

1. Niranjan, Yanamandra. **Dynamics of the B-globin gene in malas.** Department of Genetics, Andhra University, Waltair.

Immunology

1. Awasthi, Manjula. **Genetic heterogeneity in Mus Musculus and related forms from India.** (Dr Rajesh K Anand), Department of Immunology, Jawaharlal Nehru University, New Delhi.

2. Prasad, Vikram. **Receptor-mediated delivery of antisense of Oligonucleotides.** (Prof Sandip K Basu), Department of Immunology, Jawaharlal Nehru University, New Delhi.

Neurophysiology

1. Narender Kumar. **Synaptic organisation in rat retina : A study on in vivo and in vitro neuronal circuitry.** (Dr T R Raju and Dr Y Ramamohan), Department of Neurophysiology, National Institute of Mental Health and Neuro Sciences, Bangalore.

Pharmaceutical Sciences

1. Naidu, Appala Swamy. **Studies on the design and evaluation of membrane moderated transdermal drug delivery systems.** (Prof K P R Chowdary), Department of Pharmaceutical Sciences, Andhra University, Waltair.

Pharmacy

1. Satyanarayana, K. **Herbal formulations : Constituents from Salacia macrosperma in development of antidiabetic and antibiotic preparations and as coating material.** (Prof C K Kokate), Department of Pharmacy, Kakatiya University, Warangal.

Speech and Hearing

1. Pandita, Rajkumar. **Objective analysis of efficient voice.** (Dr Nataraja N P), Department of Speech and Hearing, University of Mysore, Mysore.

2. Prema K S. **Reading acquisition profile in Kannada.** (Dr Prathibha Karanth), Department of Speech and Hearing, University of Mysore, Mysore.

PHYSICAL SCIENCES

Bio Chemistry

1. Garg, Deepak Kumar. **Immunogenicity of reactive oxygen species modified poly (G) and its implication in progressive systemic sclerosis.** (Prof Rashid Ali), Department of Biochemistry, Aligarh Muslim University, Aligarh.

2. Suresh Kumar N. **Studies on the proteases of bacillus thuringiensis subsp. kurstaki.** (Prof G Venkateshwarlu), Department of Biochemistry, Osmania University, Hyderabad.

Chemistry

1. Gohil Harshad Mohanlal. **Studies on thermophysical and thermodynamic properties of sea water, it's concentrates, solar salt quality upgradation by using external means and thermal decom-position of magnesium chloride.** (Prof S N Mishra), Department of Chemistry, Bhavnagar University, Bhavnagar.

2. Harshadkumar Dave Dipika. **Studies of some medicinally important heterocyclic compounds as drug potentials.** (Dr N C Desai), Department of Chemistry, Bhavnagar University, Bhavnagar.

3. Kasthuraiah, N. **Synthesis and liquid crystalline properties of some homologous series of optically active compounds.** (Dr B K Sadasiva), Department of Chemistry, Bangalore University, Bangalore.

4. Narayanan, Beena. **Studies on thermochromic phase transitions in crystals using single crystal X-ray methods.** (Dr M M Bhadbhade), Department of Chemistry, Bhavnagar University, Bhavnagar.

5. Panari, Rafeek Gulab. **Kinetics and Mechanism of some reactions with alkaline permanganate.** (Dr S T Nandibewoor), Department of Chemistry, Karnatak University, Dharwad.

6. Rao, Meneni Srinivasa. **A chemical study of some medicinal plants from Andhra Pradesh.** Department of Chemistry, Kakatiya University, Warangal.

7. Reddy, P Sreenivasulu. **Synthesis, characterisation and properties of chelating ions-exchange resins for the removal of polyvalent metal ions from brine.** (Dr P S Anand), Department of Chemistry, Bhavnagar University, Bhavnagar.

8. Reeta Agrawal. **Chemical studies in protective coatings with special reference to organic and inorganic inhibitors.** Department of Chemistry, Devi Ahilya Vishwavidyalaya, Indore.

9. Yakkundi Shirish R. **Chemical constituents of neem (Azadirachta Indica) and their utilisation.** (Dr B Ravindranath), Department of Chemistry, University of Mysore, Mysore.

Physics

1. M. Ramesh. **Study of gold, uraninite and sulphide bearing quartz-pebble conglomerate of Kalasapura area, Chikmagalur District, Karnataka, India.** (Dr K.S. Anantha Murthy), Department of Physics, Aligarh Muslim University, Aligarh.

2. Khurshed Alam, S M. **On the wormhole solutions of the scalar tensor theory of gravitation.** (Prof B Bhattacharyya), Department of Physics, University of North Bengal, Distt Darjeeling.

3. Patil, H D. **Dielectric volumetric conductivity and ultrasonic studies of some organic molecules.** (Dr R L Patil), Department of Physics, Karnatak University, Dharwad.

4. Sheikh Mohd Saleem. **Microscopic nucleon optical potential at low and intermediate energies.** (Dr Wasi Haider), Department of Physics, Aligarh Muslim University, Aligarh.

5. Suneel Pandita. **Thermal, ion beam and laser processing of metallic multilayers.** (Dr Ajay Gupta), Department of Physics, Devi Ahilya Vishwavidyalaya, Indore.

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NATIONAL INSTITUTE OF MENTAL HEALTH AND NEURO SCIENCES
(DEEMED UNIVERSITY)
P.B. No. 2900, Hosur Road, Bangalore-560 029, INDIA

No.NIMH/ACA/ADMN/1999-2000

ADMISSION NOTICE

Applications on prescribed form from Indian Nationals are invited for admission to the following courses for the Academic Year 1999-2000 commencing from September 1, 1999.

A. POST-GRADUATE DEGREE/DIPLOMA COURSES

1. Doctor of Philosophy (Ph.D)
    - a) Ph.D. Degree in Clinical Psychology - 4 Seats
    - b) Ph.D. Degree in Neurophysiology - 2 Seats
    - c) Facilities for registration for Ph.D. in the following subjects are also available — (1) Biophysics (2) Biostatistics (3) Clinical Psychology (4) Epidemiology (5) Health Education (6) Human Genetics (7) Neurology (8) Neurochemistry (9) Neuroimaging & Interventional Radiology (10) Neuromicrobiology (11) Neuropathology (12) Neurophysiology (13) Neurosurgery (14) Neurovirology (15) Psychiatry (16) Psychopharmacology (17) Psychiatric Social Work (18) Speech Pathology & Audiology

Entrance examination for selection of candidates in respect of the subjects mentioned above at 1(c) will be held during the months of July & March. Candidates with Fellowship/sponsorship from Recognised/Registered Agencies, desirous of availing such programmes should write to the Registrar for application forms.

2.	DM Degree in Neurology	6 Seats	*(1 for Foreign/Deputed)
3.	M.Ch. Degree in Neurosurgery	6 Seats	*(2 for Foreign/Deputed)
4.	MD Degree in Psychiatry	14 Seats	—
5.	Diploma in Psychiatry (DPM)	6 Seats	(For Karnataka Domicile Only)
6.	Post Doctoral Certificate Course in Neuro Anaesthesia	4 Seats	(2 for Foreign/Deputed)
7.	M.Phil. in Clinical Psychology	15 Seats	(3 for Foreign/Deputed)
8.	M. Phil. in Psychiatric Social Work	15 Seats	(3 for Foreign/Deputed)
9.	M.Phil. in Neurophysiology	2 Seats	—
10.	M.Phil. in Biophysics	2 Seats	—
11.	M.Phil. in Speech Language Pathology	2 Seats	(1 for Foreign/Deputed)
12.	M.Sc. in Psychiatric Nursing	6 Seats	—

Foreign Nationals are required to submit their applications through the Diplomatic Channel (through the Ministry of External Affairs) and the Deputed candidates shall submit their applications to the Institute through proper channel. They shall also appear for a common Entrance Examination along with the other candidates.

*If a suitable foreign/deputed candidate is not available it will be filled by open merit.

SEPARATE APPLICATION FORM SHOULD BE OBTAINED AND SUBMITTED FOR EACH COURSE

B. ELIGIBILITY FOR ADMISSION TO ALL COURSES :

Minimum Qualifications for admission to Sl. 1 (a, b & c).

1.a) Ph.D degree in Clinical Psychology :MA/M.Sc. degree in Psychology or two-year M.Phil degree in Clinical Psychology of NIMHANS or any other recognized university or any other qualification recognized as equivalent thereto by NIMHANS, securing not less than 55% marks in the aggregate of the master's degree course.

b) **Ph.D Degree in Neurophysiology :** Master's Degree in Life Science/M.Phil with 55% marks in the aggregate or MD/DNB/ M.Ch. in Neurosurgery/DM in Neurology of a University recognised as equivalent by NIMHANS.

c) **Ph.D. Degree in other subjects :** A Master's degree in any discipline related to the concerned subjects with a minimum of 55% marks in the aggregate or DM in Neurology/M.Ch. in Neurosurgery/MD/MS/Diplomate of the National Board of Examinations of a University recognised as equivalent by NIMHANS.

For Ph.D. in the subjects under basic medical sciences — A degree of Bachelor of Medicine and Bachelor of Surgery (MBBS) or BE, B.Tech., B.Sc. Engineering from a University recognized by NIMHANS securing a minimum of 55% of the aggregate marks in the professional examinations.

Minimum Qualifications for admission to Courses from Sl. No. 2 to 5.

i) MBBS degree of a recognised University recognised as equivalent by NIMHANS and recognised by the Indian Medical Council.

ii) A certificate to the effect that compulsory Rotating Internship of one year after MBBS or its equivalent recognised by Indian Medical Council should be produced before 25.07.1999.

iii) Full Registration with a State Medical Council; and

iv) a) For candidates with MBBS, the duration of DM degree in Neurology and M.Ch. degree in Neurosurgery courses will be five years.

b) (i) For candidates with MD Degree/Diploma of the National Board of Examinations in General Medicine or Paediatrics; and (ii) MS degree/Diplomate of National Board of Examinations in General Surgery or Orthopaedics of a University recognised as equivalent by NIMHANS and also recognised by the Indian Medical Council, the duration of DM Degree in Neurology and M.Ch. in Neurosurgery courses respectively will be 3 years.

Minimum Qualifications for admission to the Course at Sl. No. 6

MD degree in anaesthesia of a recognised University recognised as equivalent by NIMHANS. Two candidates by direct admission and two by deputation will be admitted to be course.

Minimum Qualifications for admission to the Courses from Sl. Nos. 7 to 12.

M.Phil. in Clinical Psychology : M.A./M.Sc. degree in Psychology of a University recognised as equivalent by NIMHANS securing not less than 55% marks in the aggregate of the Master's Degree as a whole.

M.Phil. in Psychiatric Social Work : Master's Degree of Social Work from a University recognised as equivalent by NIMHANS securing not less than 55% marks in the aggregate of the Master's Degree as a whole. Preference will be given to those who have specialised in Medical and Psychiatric Social Work.

M.Phil. in Neurophysiology : MBBS degree or Master's Degree in Life Sciences with not less than 55% marks in the aggregate of a University recognised as equivalent by NIMHANS.

M.Phil. in Biophysics : A candidate who has obtained not less than 55% marks in the Master's Degree in Physical/Life Sciences or MBBS or BE from a University recognised as equivalent by NIMHANS.

M.Phil in Speech-Language Pathology : M.Sc. degree in Speech and Hearing from a recognized University or any other Master's degree in speech and hearing recognized as equivalent thereto from NIMHANS, and who have secured not less than 55% marks in the aggregate of the Master's degree course.

M.Sc. in Psychiatric Nursing :

(a) The course is open to those who are Registered Nurses with B.Sc./B.Sc. (Hons) (Nursing) of a University which is recognised by NIMHANS (Deemed University) with not less than 60% aggregate marks.

(b) Should have a minimum of two years of experience after obtaining B.Sc./B.Sc. (Hons) (Nursing) degree in Hospital Nursing Education, Institution or Community Health setting.

A relaxation of 5% on the aggregate of marks obtained will be given for non-medical and Ph.D courses in respect of SC & ST candidates.

C. GUIDELINES :

In respect of Non-Medical Courses, candidates who have appeared for the qualifying examinations and are awaiting results, many also apply. However, such candidates will be eligible to appear in the final interview only if they produce the proof of having passed the examination in writing issues by the University as on the date of interview. In respect of Medical

Courses, the candidates should have completed one year internship and registration with State Medical Council on or before 26.07.1998.

D. EMOLUMENTS :

Candidates admitted to Medical Courses will be paid as per the Residency Scheme, i.e., they will be paid total emoluments of Rs. 12,648/- per month in the first year and Rs. 13,077/- per month in the second year and Rs. 13,506/- in the third year. This will be inclusive of all admissible allowances.

Candidates with PG Degree (MD/MS) admitted to the 3 years course in DM Neurology/M.Ch. Neurosurgery will be considered for the post of Senior Resident, subject to the availability of vacancies.

Candidates admitted to other M.Phil Courses will be paid total emoluments of Rs. 3915/- per month in the first year and Rs. 4060/- in the second year. This will be inclusive of all admissible allowances.

Candidates admitted to Ph.D courses (Only under 1 a & b) will be paid emoluments of Rs. 4205/- per month in the first year and Rs. 4815/- per month in the second and third year. This will be inclusive of all admissible allowances.

Candidates admitted to M.Sc. in Psychiatric Nursing Course will be paid Rs. 650/- as stipend per month during the period of the course, with the exception of the candidates who are on deputation/drawing pay and allowances from their employers.

Foreign Nationals and Deputed candidates, from State Govt./Govt. of India, for courses are not eligible for any stipendary benefits. The fixed fee structure for Foreign Nationals will be in Dollars and for deputed candidates in Indian Rupees.

RESERVATION OF SEATS :

1. Reservations are provided for SC/ST candidates as per Government of India directions, i.e., 22.5% (15% for SC and 7.5% for ST) of the total Post Graduate Medical and Non-Medical courses (except DM in Neurology and M.Ch. in Neurosurgery).
2. 5% of the total of Post-graduate Medical seats (except DM in Neurology and M.Ch in Neurosurgery) are reserved for Medical Graduates who are working under the Family Welfare Programme in the rural areas having less than 5000 population for more than 2 years subject to submission of certificate from the Tahsildar.
3. Six seats in Diploma in Psychiatry and three seats in M.Phil in Clinical Psychology are reserved for domiciles of Karnataka State.

Note : To claim that the candidates are residents/domiciles of Karnataka State origin, they have to produce certificate from the Tahsildar to the effect that he/she or his/her parent/father/mother has been a resident of Karnataka State for a period of 10 years or has owned or possessed landed property or house in Karnataka State.

Preference will be given to candidates deputed by Central/State Governments.

INSTRUCTIONS :

1. Prescribed application forms can be had from the Director, NIMHANS on request by mentioning the course and by enclosing a Demand Draft/Indian Postal Order of the value of Rs. 250/- (non-refundable) drawn in favour of Director, NIMHANS, Bangalore-560 029, along with a self addressed stamped envelope (25 cm x 18 cm) of Rs. 15.00.
2. Candidates may apply for more than one course provided they are eligible.
3. Applications, complete in all respects, should be sent to the Director, NIMHANS, P.B. No. 2900, Bangalore-560 029.
4. Last date for issue of applications —
   (i) through post 10th June
   (ii) in person 19th June
5. Last date for receipt of filled-in applications is **22.06.1999.**
6. Written test will be held in respect of each course separately in Bangalore on Sunday the 25th of July 1999.
7. Commencement of Courses : 1st September
   i) Last date for admission : 7th September
   ii) With prior request : 15th September

Dr. M. Gourie Devi
DIRECTOR/VICE-CHANCELLOR

NATIONAL INSTITUTE OF MENTAL HEALTH AND NEURO SCIENCES
(DEEMED UNIVERSITY)
BANGALORE-560 029

NIMH : ACA-B:DPN-DNN-M.Sc:ADMN:1999-2000

ADMISSION NOTICE

Applications, on prescribed forms from eligible candidates/employees, are invited for admission to the following courses for the Academic Year 1999-2000, commencing from 1st September, 1999.

A. DIPLOMA COURSES IN NURSING

1. Diploma in Psychiatric Nursing (DPN) —30 Seats
2. Diploma in Neurological and Neurosurgical Nursing (DNN) — 06 Seats
   (Two seats are reserved for Military Nursing Officers)

Separate application forms should be obtained and submitted for each course.

ELIGIBILITY FOR ADMISSION

i) Should possess 'A' Grade Certificate in General Nursing, recognised by Indian Nursing Council.
ii) Should be a registered nurse in the State Nursing Council, with TWO years experience.

GUIDELINES :

Private candidate admitted to the above nursing course will be paid a stipend of Rs. 520/- per month. The candidates who are on deputation will not be paid any stipend.

DURATION : One year from 1st September 1999.

RESERVATION :

15% of seats are reserved for SC, 7.5% of seats are reserved for ST.

B. COURSE IN NEUROPHYSIOLOGY TECHNOLOGY :

Diploma in Clinical Neurophysiology Technology (DCNT)

DURATION : One year.

Number of Seats — 4 Nos.

Preference will be given to deputed candidates from State/Central Govt/Public Undertaking/Private Institutions.

ELIGIBILITY FOR ADMISSION :

Minimum Qualification : B.Sc. with Physics/Electronics/Computer Sciences with minimum II class in the qualifying examination.

OR

Diploma in Electronic/Electrical/Instrumentation.

OR

Diploma in Computers (approved by Board of Technical Education)

OR

PUC with 3 years experience as EEG Technician.

STIPEND : Candidate admitted to the course will be paid a stipend of Rs. 750/- per month. Deputed/sponsored candidates, who draw salary of pay and allowances from their employers/sponsorers, are not entitled for stipend from this Institute.

GUIDELINES :

1. Prescribed application can be had from the Director, NIMHANS by enclosing an Indian Postal Order of value of Rs. 100/- drawn in favour of the Director, NIMHANS, Bangalore, along with a self addressed stamped envelope (26 cm x 10 cm) of Rs. 15.00.
2. Applications completed in all respects should be sent to the Director, National Institute of Mental Health and Neuro Sciences, P.B. No. 2900, Bangalore-560 029.
3. Last date for issue of application —
   (i) through post 10th June
   (ii) in person 19th June
4. Last date for receipt of filled-in application is 22.6.1999.
5. Commencement of Courses : 1st September
   i) Last date for admission : 7th September
   ii) With prior request : 15th September

Dr. M. Gourie Devi
DIRECTOR/VICE-CHANCELLOR

BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY

(A CENTRAL UNIVERSITY)

VIDYA VIHAR, RAE BARELI ROAD, LUCKNOW-226 025

Opportunities for pursuing Higher Studies in modern and innovative disciplines

ADMISSION NOTICE 1999-2000

Applications are invited from eligible candidates for appearing in entrance test for admission to the following full-time programmes of the University, to be conducted on June 13, 1999 at Lucknow :

	SCHOOL/CENTRE	COURSE	DURATION AND NO. OF SEATS	ELIGIBILITY FOR ENTRANCE TEST
1.	**School for Ambedkar Studies**	**M.Phil. (Economics)**	$1\frac{1}{2}$ years, 20 (10 reserved for SC/ST)	Postgraduate in Economics with 55% Marks (50% Marks for SC/ST candidates)
		M.Phil. (History)	$1\frac{1}{2}$ years, 20 (10 reserved for SC/ST)	Postgraduate in History with 55% marks (50% Marks for SC/ST candidates)
2.	**School for Information Science and Technology**	**M.Sc. (Information Science)**	2 years, 20 (10 reserved for SC/ST)	Graduates of all faculties including engineering and medicine with 45% Marks (36% Marks for SC/ST)
3.	**School for Environmental Sciences**	**M.Sc. (Environmental Sciences)**	2 years, 20 (10 reserved for SC/ST)	B.Sc. (Agriculture/Biology/Life Sciences) with 45% marks (36% Marks for SC/ST)
4.	**Centre for Rural Technology**	**Postgraduate Diploma (Horticulture)**	1 year, 20 (10 reserved for SC/ST)	B.Sc. (Agriculture/Biology/Life Sciences) with 45% Marks (36% Marks for SC/ST)
		Postgraduate Diploma (Sericulture)	1 year, 20 (10 reserved for SC/ST)	B.Sc. (Agriculture/Biology/Life Sciences/Sericulture) with 45% Marks (36% Marks for SC/ST)
5.	**Centre for Vocational Studies**	**Postgraduate Diploma (Computer Software Applications)**	1 year, 20 (10 reserved for SC/ST)	Graduates of all faculties with 45% Marks and Science and Mathematics at 10+2 level (36% Marks for SC/ST)
6.	**Centre for Human Rights**	**Postgraduate Diploma (Human Rights)**	1 year, 20 (10 reserved for SC/ST)	Graduates of Law faculty with 45% Marks (36% Marks for SC/ST)

How to Apply :

The handbook containing application form for Entrance Test can be obtained from the **Office of the Registrar, Babasaheb Bhimrao Ambedkar University, Vidya Vihar, Rae Bareli Road, Lucknow-226 025** on payment of Rs. 200/- (Rs. 50/- for SC/ST candidates) at the counter of the University or by remitting crossed Demand Draft of same amount payable at Lucknow and drawn in favour of the Finance Officer, Babasaheb Bhimrao Ambedkar University, Lucknow alongwith a self-addressed stamped envelope (Rs. 20/-) of size not less than 9"x12". Payment in any other form will not be accepted. **Last date for receipt of application form complete in all respects is May 15, 1999.** Candidates can apply for more than one programmes by filling up separate application form for each programme.

Note :

1. Candidates due to appear in 1999 at the final year examination of the graduate/postgraduate degree prescribed for admission may also appear in the entrance test but their admission would be provisional and subject to their fulfilling the eligibility criteria (as mentioned in the handbook).
2. The number of seats in a given course may vary at the discretion of the University.
3. During 1999-2000, limited rooms in hostel may be available.
4. While the University shall ensure timely despatch of application forms soon after the receipt of the requests from candidates, it will not be responsible for any postal delay.
5. Incomplete applications and those received on photocopies of the application form will not be entertained.

REGISTRAR

NATIONAL INSTITUTE OF INDUSTRIAL ENGINEERING (NITIE)

MANAGEMENT TEACHING TECHNIQUES (FDP) for Management Teachers)

at NITIE, Mumbai 21-25 June, 1999

NITIE is offering one week, Residential Training Programme on "Management Teaching Techniques" for teachers of General Management, OB and Human Resource Management areas. The Programme is designed to enable the participants to develop specific skills in adapting a variety of padagogies viz, Business games, simulation exercises, role plays etc. in teaching the courses.

The programme fee is Rs. 7,000/-, to cover tuition, course materials, lodging and boarding and other institutional amenities.

Interested teachers who would like to enrol for the programme may send their personal details, courses teaching/taught, alongwith a D/D for Rs. 7,000/- drawn in favour of NITIE, Mumbai latest by 7th June, 1999.

For further details please write to :

Asst. Registrar (Programmes)
National Institute of Industrial Engineering (NITIE)
Vihar Lake, Mumbai-400 087
Tel. (022)8573371 Fax No. (022)8573251

IGNOU

INDIRA GANDHI NATIONAL OPEN UNIVERSITY
Maidan Garhi, New Delhi 110068

CORRIGENDUM

Please refer our advertisement published in this magazine on **12.04.1999** regarding the admissions to Certificate in Primary Teaching (CPT) of Diploma in Primary Education (DPE) in West Bengal, Sikkim and North Eastern States.

Please note that:

i) The programme will not be on offer in West Begal till further announcement is made by the University.

ii) As regards the Sikkim and North Eastern States, the admissions will be finalised only after the necessary approval is obtained from the NCTE. This will be intimated to all applicants.

iii) Last date for NE States /Sikkim is **17 May 1999.**

Director (SR&E)

UNIVERSITY GRANTS COMMISSION, NEW DELHI

RESULT OF THE UGC-NET TEST FOR JUNIOR RESEARCH FELLOWSHIP (JRF) AND ELIGIBILITY FOR LECTURESHIP HELD ON 27.12.1998

The candidates whose Roll Numbers are given below have qualified the UGC-NET Test subject to the fullfilment of eligibility conditions laid down for the test.

GENERAL CANDIDATES

FOR JUNIOR RESEARCH FELLOWSHIP AWARD AND ELIGIBILITY OF LECTURESHIP

A025873	M035081	T035098	K035112	E035232	M035398	T035425	T035425	T035482	B036062	P036139	A036418	A036422	A036458
B036778	P055100	R055218	T095126	T095831	N095883	T095884	T095884	D096001	E096093	A096119	T096136	R096141	M096153
A096157	K096237	D096434	B096464	T106120	P106183	R115096	R115096	P115145	H125228	D145410	T165512	P185084	K185253
N185449	E205154	R205236	M205290	T215002	D215013	A215038	A215038	K215044	B215062	H215064	D215070	M215091	D215144
R215149	T215167	A215169	T215230	R215324	D215334	D215353	D215353	A215612	P215922	P215994	T216008	T216012	M216025
B216053	E216214	A216219	M216253	R225222	H225420	P225757	P225757	D225821	M225861	H225984	N226074	N226114	K226142
T235377	E235452	R235460	E235471	N235570	N235908	R235987	R235987	B236035	K245093	R245145	K245211	R245276	A245277
M245282	M245309	D245311	P245418	P245456	T245558	B245565	B245565	N245576	H245607	B245677	A245695	E245711	T245767
P245840	N245863	B245871	E245901	A245978	E246001	D246127	D246127	D246150	K246255	N246265	A246272	B246351	E246358
N246377	B246385	K246386	B246482	N246489	K246504	R246516	R246516	E246531	R246569	R246632	E246774	E246911	K246975
N247032	A247054	T247219	K247246	P247666	N247729	B247760	B247760	K247854	H247986	R248006	T248121	R248141	A248176
A248309	K248315	A248328	N248344	K248543	T248554	H248578	H248578	P248619	B248688	T248822	P248847	M248892	B249018
E249143	A255118	D305244	R305249	M305250	M305402	R315318	R315318	P315327	A335018	B335023	H335477	R335482	H336132
[illegible]	M345229	A365301	R365412	N405074	R405154	D405179	D405179	A415414	H435019	M435221	R435317	N435465	P435837
N436023	H436029	B436065	K436144	T436271	D436341	K436372	K436372	H436392	R455282	M456572	H456598	P456599	E476070
T475185	P475483	E475539	N475720	K475880	T475964	H476035	H476035	N476462	T476478	D476548	M485005	P485226	D485926
R485994	B495991	A496107	D525125	M535272	D545198	K565158	K565158	D595098	B605002	R615175	T615193	P635001	M635057
T635103	A635255	H635258	B635260	K635276	R635292	E635590	E635590	A636037	E636066	N636184	M645660	T645736	T645871
P645902	N645906	N646481	A646505	M646609	N646876	T647283	T647283	M647452	E647603	P655380	B655768	K655813	H655867
E656014	T656133	H665083	P665089	R665265	N665472	A665500	A665500	T665737	M665828	N685547	H685732	E686082	K686509
R687102	N687149	T687631	B687696	B696035	K705073	K715313	K715313	T755096	N795160	E815066			

FOR ELIGIBILITY OF LECTURESHIP ONLY

N025063	E025066	N025068	T025073	N025087	N025165	T025170	R025186	N025205	P025216	H025249	A025265	T025297
A025289	B025306	R025319	B025460	R025469	E025499	K025501	N025507	D025557	M025559	D025561	E025562	R025566
N025579	T025584	B025587	H025593	T025599	E025617	K025628	A025630	K025632	H025726	P025727	D025728	E025729
B025739	D025751	E025752	K025759	H025764	D025770	A025776	P025784	M025812	H025819	T025829	E025830	T025833
B025836	M035005	D035018	E035023	M035024	R035027	H035073	T035083	K035091	E035192	N035194	H035210	D035212
E035213	A035218	H035225	M035233	K035243	D035246	M035290	B035301	D035324	P035357	M035364	B035368	T035370
K035374	H035375	R035386	A035387	P035395	H035400	A035408	A035412	E035418	M035419	D035421	N035424	K035429
R035430	B035432	K035433	P035435	D035436	E035437	M035438	E035441	N035443	R035445	H035449	E035456	R035464
H035466	P035473	R035479	K035486	D035489	B035506	B035510	K035526	P035532	T035537	D035546	H035643	M035666
E035762	H035867	A035883	R035941	B035943	B035977	P036012	N036020	B036096	P036099	H036104	D036106	M036108
D036110	E036145	B036174	E036183	B036379	M036414	R036417	B036419	T036420	R036421	B036423	R036436	A036437
R036440	K036443	P036445	D036446	M036448	T036469	E036470	P036479	H036482	R036493	P036504	N036512	B036520
E036525	D036539	H036541	P036542	E036544	M036545	A036553	K036555	A036572	M036598	M036623	R036679	T036697
R036780	M036788	T036794	B036803	E055024	M055097	E055102	B055224	E055229	P055231	N055235	K055244	E055271
M055308	M055327	H055376	P055440	T055523	K055546	D055553	M055556	B055619	N095009	N095066	A095088	B095089
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D096356	M096358	E096361	R096365	T096383	M096396	T096398	N096422	B096426	H096432	M096440	N096441	H096451
A096463	R096477	K096484	D096487	N096494	D096508	E096509	M096514	B096523	K096524	H096525	D096531	N096534
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H105913	E105918	N105922	H105928	B105930	E105935	N105941	T105942	H105951	R105958	A105959	R105962	A105978
B105979	B105983	P105986	D105987	P105990	T105995	R105996	A105997	E106001	N106003	A106010	B106011	K106012
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D106087	D106091	M106093	A106097	K106099	T106101	P106107	E106109	D106112	B106119	R106121	P106128	N106134
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M106226	B106235	K106236	P106238	D106239	M106246	T106247	A106249	R106252	P106261	R106311	M106435	D106530
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K115143	K115158	H125042	H125116	R125131	A125147	B125148	K125153	M125158	H125173	E125180	A125206	N125241
K125246	P125248	B125253	E135036	P135150	T135193	H135198	D135210	T135233	H135238	N135251	K135256	M135265
M135284	N135285	T135307	K135315	R135327	A135332	P135336	D135341	D135356	A135366	B135367	B135371	P135374
R135384	P135389	T135501	R135521	H135526	T135536	A135537	B135538	N135591	H135637	H135641	D135643	M135664
R145089	N145198	H145229	N145295	A145298	B145324	T145336	P145346	B145381	K145397	P145424	D145425	N145451
B145455	B145474	A145488	A145492	H145495	H145501	E145504	R145512	P145517	E145542	K145553	N145563	K145591
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D185066	E185071	N185073	E185086	M185087	A185095	P185099	R185100	P185124	K185160	R185172	N185185	K185200
P185202	R185208	E185219	P185221	N185225	A185232	P185236	M185239	M185243	R185250	B185252	A185266	B185267
D185275	P185314	R185339	T185342	A185344	K185346	D185353	M185355	N185356	T185357	R185358	A185359	D185391
E185392	T185395	D185412	R185417	D185427	E185428	D185431	B185476	K185477	H185478	A185500	H205001	D205003
N205008	H205016	E205023	T205045	K205053	N205063	N205078	E205080	N205082	M205121	N205122	R205124	K205127
H205128	P205129	P205133	D205134	E205135	T205138	R205139	M205140	N205141	A205144	B205145	K205146	D205149
K205150	H205151	P205152	D205153	M205155	T205157	A205159	T205161	R205162	A205163	D205168	H205170	R205177
B205179	P205186	D205187	A205222	M205228	A205237	M205252	K205258	R205274	A205275	P205323	N215001	R215003
M215016	A215019	T215021	M215034	B215039	H215045	P215046	M215049	E215052	R215056	K215059	A215061	P215065
M215066	N215069	M215072	A215076	B215077	H215079	D215085	B215096	A215101	M215108	B215117	K215118	B215121
K215122	E215126	M215127	K215137	B215140	P215143	E215145	M215146	K215160	H215161	D215163	N215166	R215168
E215179	H215180	E215198	N215210	R215212	H215220	B215229	H215269	P215274	K215291	R215299	H215309	P215314
E215316	B215330	D215368	E215373	B215383	E215392	T215401	E215409	A215422	K215424	H215425	P215426	P215430
B215438	H215444	E215447	M215448	M215452	N215453	H215463	P215464	M215467	A215475	P215479	H215482	R215489
M215507	D215543	M215545	N215546	R215548	T215551	K215555	R215571	B215609	T215610	R215611	H215615	D215617
E215618	P215620	E215622	M215623	T215625	A215627	K215629	H215634	M215638	D215640	E215641	T215644	K215652
H215653	P215654	N215658	B215670	H215672	D215674	E215675	T215678	R215679	M215680	N215681	R215683	B215685
M215687	P215688	D215689	H215691	T215697	R215698	M215701	N215702	T215703	R215704	P215709	D215714	M215716
M215717	T215722	A215724	B215725	H215727	P215728	D215729	K215730	P215732	D215733	E215734	M215735	R215738
A215762	B215763	K215764	D215771	E215772	N215774	T215776	R215778	K215779	K215783	D215786	M215792	B215797
H215805	D215807	E215808	M215809	P215810	D215811	H215824	M215832	K215842	P215844	R215854	A215855	B215856
M215860	N215871	A215874	H215877	P215878	D215879	D215883	M215885	H215896	P215903	E215924	R215932	E215939
H215940	N215945	R215947	N215979	B215991	H215993	A216014	A216052	P216056	B216068	N216083	R216125	K216166
R216222	A216223	B216224	T216240	E216248	M216249	P216250	E216252	P216356	R225009	A225014	N225028	R225032
K225036	H225040	M225082	T225084	K225088	R225144	B225148	K225170	E225193	A225204	B225205	E225214	A225223
E225248	M225272	K225303	A225335	M225346	M225350	B225355	D225363	D225378	T225386	B225393	B225471	H225509
B225511	H225513	N225518	T225519	E225520	M225521	B225526	P225529	R225539	R225558	B225564	P225571	A225641
B225642	P225645	D225650	M225652	B225657	M225671	K225677	P225679	T225692	R225693	H225703	T225713	A225715
A225768	A225772	B225773	D225777	N225784	B225788	B225792	D225796	B225809	M225823	A225831	K225833	D225838
N225839	E225841	M225842	B225847	B225851	K225852	E225856	N225858	E225860	K225867	K225871	D225874	M225876
B225886	H225887	H225891	D225893	M225895	N225902	D225929	N226021	B226025	A226077	B226103	R226116	A226117
N226148	E226150	B226156	P226159	B226160	P226163	P226178	M235001	K235011	P235047	R235057	B235059	H235065
M235066	B235118	B235122	N235167	T235181	K235201	T235250	A235252	B235287	N235288	K235313	E235321	T235324
T235465	B235462	H235464	P235465	D235466	M235472	N235473	K235478	H235479	B235481	P235484	D235485	N235492

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SC / ST CANDIDATES (SUBJECTED TO VERIFICATION OF PROOF OF SC / ST)

FOR JUNIOR RESEARCH FELLOWSHIP AWARD AND ELIGIBILITY OF LECTURESHIP

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FOR ELIGIBILITY OF LECTURESHIP ONLY

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E895055	R895059											

(1) The Commission shall not be responsible for any printing error.

(2) The above result is subject to the fulfilment of eligibility conditions and verification of the records.

(3) The candidates who have qualified should inform their change of address, if any, to the Joint Secretary (NET) University Grants Commission, Delhi University (South Campus) Benito Juarez Marg, New Delhi - 110 021

Joint Secretary

—davp 1331(1)99

CLASSIFIED ADVERTISEMENTS

DIOCESAN SOCIETY OF EDUCATION'S
ROSARY COLLEGE OF COMMERCE & ARTS
NAVELIM, SALCETE,
GOA-403 707

Applications are invited for the following posts :

1. Lecturer in Psychology — 1 Post (Full Time)
2. Lecturer in Psychology — 1 Post (Full Time)
3. Lecturer in Computer Science — 1 Post (Full Time)
4. Lecturer in Computer Science (for B.C.A. (Com) self financed Course) — 1 Post (Full Time)
5. Lecturer in Accounts/Commerce — 1 Post (Full Time)
6. Lecturer in Economics — 1 Post (Lecture basis)
7. Lecturer in Konkani — 1 Post (Full Time)
8. Lecturer in English — 1 Post (Full Time)
9. Lecturer in Hindi — 1 Post (Lecture basis)
10. Lecturer in Business Law — 1 Post (Lecture basis)
11. Lecturer in History — 1 Post (Full Time)

Essential Qualifications :

1. Master's degree in the relevant subject with atleast 55% marks or its equivalent grade and good academic record.
2. The candidates must have the Master's degree as well as the Bachelor's degree in the same subject for which he is being appointed, unless he has passed the Post Graduate examination under the change of faculty scheme.
3. Candidates should have cleared the Eligibility Test for Lecturers conducted by UGC, CSIR or similar tests accredited by UGC. In case candidates having passed the said Eligibility Test are not available, candidates fulfilling other conditions would be considered for appointment on purely temporary basis till the end of the academic year.
4. All other requirements prescribed by UGC, Goa University and Goa Government.

For Computer Science

a) First class B.E/B.Tech. in Computer Science or Electronics having consistently good academic record with two years experience of teaching/research/industry. In case candidates having passed GATE are not available or found suitable, candidates without GATE may be considered for temporary appointments.

OR

b) M.E/M.Tech. in Computer Science or Electronics with 55% marks and good academic record.

OR

c) M.C.A. or M.Sc. in Computer Science or Electronics with 55% marks and good academic record.

OR

d) M.S. Statistics or Mathematics with 55% marks and good academic record with exposure to Computer Science.

Desirable Qualifications :

— Ph.D. or M.Phil. and a regular student for graduation and postgraduation.

Service Conditions :

— As prescribed by the Goa University, UGC, Director of Higher Education, Govt. of Goa and other competent authorities. Persons who are already employed shall send their application through proper channel. Break in service, if any, should be accounted for.

Scale of Pay :

— Rs. 2200-75-2800-100-4000 and other admissible allowances. Certified copies of statement of marks at all public examinations should be enclosed.

— The right to fill up the above mentioned post is reserved.

— Applications alongwith attested Xerox copies of all certificates should reach the undersigned within 15 days from the date of publication of the advertisement.

Panjim, Goa-430001 **SECRETARY**

SHRI LAL BAHADUR SHASTRI
RASHTRIYA SANSKRIT VIDYAPEETHA
(Deemed University)
Katwaria Sarai, New Delhi-110016

ADMISSION NOTICE : 1999-2000

Applications on prescribed form are invited for Shiksha-Shastri (B.Ed) course admission test.

Eligibility:

1 (a) Shastri/B.A.(with Sanskrit as one of the main subjects) or equivalent examination with minimum 45% marks in aggregate in 10+2+3 pattern of Education.

OR

(b) Acharya/M.A.(Sanskrit) with minimum 45% marks in aggregate.

OR

(c) Acharya 1st year/M.A.(Sanskrit), 1st year/Bridge Course Examination of one year duration with minimum 45% marks in aggregate at Graduate level in 10+2+2 or 11+3 pattern of education.

Note : Total study period (a), (b) & (c) above should not be less than 15 years.

2. Must have studied atleast one school subject / language at Graduate level in addition to Sanskrit.

Age : 20 years minimum on 27-06-1999.

Relaxation:

Relaxation of 5% marks in the marks obtained at Graduate level will be given to the Scheduled Castes and Scheduled Tribes and Handicapped / Blinds.

The application forms and prospectus can be had from the office of the Vidyapeetha from 03-05-1999 to 04-06-1999 on payment of Rs. 40/-in cash or by sending a crossed Demand Draft of Rs.60/- in favour of "Registrar, Shri Lal Bahadur Shastri Rashtriya Sanskrit Vidyapeetha, New Delhi-110016."

The last date of receipt of duly filled in application forms is 04 - 06 - 1999.

Applications received after last date shall not be accepted.

(For detailed information, prospectus may be seen.)

SANSAR CHAND
REGISTRAR

CENTRE FOR DEVELOPMENT OF IMAGING TECHNOLOGY (C-DIT)

THIRUVANANTHAPURAM-695 027, KERALA

e-mail: cdit@giasmd01.vsnl.net.in

(An Autonomous Research, Training and Video Production Centre under the Govt. of Kerala)

ADMISSION NOTIFICATION FOR THE POST GRADUATE DIPLOMA IN SCIENCE AND DEVELOPMENT COMMUNICATION (DSDC)

Applications are invited from eligible candidates for admission to the one-year, full time, Diploma in Science and Development Communication (DSDC) programme of the Centre. This is an intensive **video production course in science and development communication.** The DSDC programme will impart theoretical and practical skills in scripting, direction and video programme production. Essential skills in editing, videography, sound recording and computer graphics will also be provided as part of the training.

Eligibility : A bachelor's degree in any discipline with a minimum of 50% marks in aggregate (45% for SEBC candidates whose annual income is not above Rs. 42000/-). SC/ST candidates need obtain only a pass in the qualifying examination. Those awaiting results can also apply. Interested Teachers of universities/recognized schools and Government servants from concern departments who wish to join the course on deputation basis shall forward their application through proper channel.

Seats : Total Seats — 20. Six seats are earmarked for graduates in Natural Science and allied disciplines and two seats for women. Five seats are reserved for foreign nationals and wards of NRIs on a differential fee basis. SC/ST and SEBC candidates will be given reservation as per the existing rules of the Government of Kerala.

Application forms and prospectus can be obtained from the Course Director, Communication Training Division, C-DIT, Chitranjali Studio Complex, Thiruvananthapuram-695 027, Kerala on request accompanied by a crossed Indian Postal Order or Demand Draft for Rs. 25/- drawn in favour of **"The Registrar, C-DIT'**, payable at **"Thiruvananthapuram"**. Request by post should also be accompanied by a self-addressed and stamped (Rs. 6/-) envelope (26 cm x 11 cm). **In view of the request received from applicants the last date for receipt of duly filled application forms has been extended to May 31, 1999.**

Entrance Test/Interview : The candidates are required to take an entrance examination on June 13, 1999 to be held at Thiruvananthapuram and a few other centres like Chennai, Bangalore and New Delhi. Separate procedures for admission of foreign nationals and wards of NRIs will be followed. C-DIT reserves the right to change or cancel any of the examination centre and/or date, if found necessary.

Thiruvananthapuram
April 4, 1999

REGISTRAR

SCHOOL OF DISTANCE EDUCATION

ANDHRA UNIVERSITY
VISAKHAPATNAM - 530 003 (A.P.)

ENTRANCE EXAMINATION NOTIFICATION, JUNE 1999 FOR LIBERALISED ADMISSION INTO B.A./B.COM WITHOUT FORMAL ACADEMIC QUALIFICATIONS

Applications are invited from the candidates residing in India for Entrance Examination for admission into Ist Year B.A/B.Com Degree Course for the academic year 1999-2000 through the School of Distance Education.

No minimum qualification is required to appear for Examination except that **Candidates should have completed 18 years of age by 1-7-1999.** Candidates who pass the Entrance Examination are eligible for admission into **Ist Year B.A. /B.Com.** Course in the School of Distance Education only. **Applications will be issued from 24th April 1999.** Duly filled in applications should reach this office on or before **12-5-1999.** Applications received after the due date will be accepted on payment of penal fee at the following rates :

Upto 18-5-1999.....Rs. 10/- Upto 24-5-1999......Rs. 50/-

Applications received after 24-5-1999 will not be accepted even with maximum penal fee.

Date of B.A. and B.Com. Entrance Examination is 12-6-1999.

Intending candidates may write to the undersigned by DESIGNATION for application form by sending **Rs. 40/- by Demand Draft, drawn in favour of the Director, School of Distance Education, Andhra University, Visakhapatnam** along with one self addressed envelope of 9" x 6" size (without affixing stamps). The candidates may also remit cash at the Cash Counter in the School of Distance Education towards application form. **Postal Orders and Cheques will not be accepted.** Entrance Examination fee is **Rs. 150/-**

The application forms are also available **at the following places** on payment of **Rs. 40/-** through **Demand draft drawn in favour of the Director, School of Distance Education, Andhra University, Visakhapatnam - 530 003 :**

Study Centres : 1) Government College, Srikakulam, 2) M.R. College, Vizianagaram, 3) Mrs. A.V.N. College, Visakhapatnam, 4) Government College, Rajahmundry, 5) P.R. Govt. College, Kakinada 6) Sir C.R. Reddy College, Eluru, 7) S.R.R. & C.V.R. Govt. College, Vijayawada; 8) A.C. College, Guntur, 9) D.N.R. College, Bhimavaram, 10) C.S.R. Sarma College, Ongole, 11) Silver Jubilee College, Kurnool, 12) A.M.A.L. College, Anakapalle, 13) R.S.R.K.R.R. College, Bobbili, 14) Noble College, Machilipatnam, 15) V.S.R. & N.V.R. College, Tenali, 16) Govt. Degree College, Narasannapeta, 17) S.G.S. College, Jaggayyapeta, 18) S.S. & N.College, Narasaraopeta, 19) S.K.B.R. College, Amalapuram, 20) V.R.S. & Y.R.N. College, Chirala, 21) Sri Sarvodaya College, Nellore, 22) B.V.K. College, Visakhapatnam, 23) Y.N. College, Narsapur, 24) S.V.K.P. & Dr. K.S. Raju Arts & Science College, Penugonda, 25) Progressive Degree College, Hyderabad, 26) Govt. Degree College, Narsipatnam, 27) Govt. Degree College, Tuni, 28) J.K.C. College, Guntur. 29) Sri Venkateswara College, New Delhi, (Tel No. 6118536.)

Work Centre : 1) Green Pasters School, C/o Acts institute, 15KM Hosur Road, Singasandra (PO) Bangalore -68.

Visakhapatnam **PROF. B. SATYAM**
Date : 15-04-99 Director (I/c)

Note : 1. The applicants should clearly mention whether they require Entrance Examination application for B.A. or B.Com.

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